

**East Tennessee Human Resource Agency
Workforce Development**

2016 Labor Education Alignment Program (LEAP 2.0)

Advanced Manufacturing and Workforce Center, Phase 3

East Tennessee Human Resource Agency
Workforce Development
IN PARTNERSHIP WITH

1. Roane State Community College
2. Campbell County Schools, Cumberland County Schools, Lenoir City Schools, Loudon County Schools, and TN Colleges of Applied Technology
3. Employer Partners: CoLinX, Mizkan, Proton, SL, SmallBiz, Tate & Lyle and more
4. Chamber Partners in Campbell, Cumberland and Loudon counties

Co-Directors:
Dr. Markus Pomper
865 354-3000 x4233
pomperm@roanestate.edu

Gordon Williams, Mechatronics Director
865 354-3000 x4899
williamsg1@roanestate.edu

Funding requested: \$975,070.44



Dr. Markus Pomper - Project Co-Director



Dr. Chris Whaley
President, Roane State Community College

RECEIVED

JUL 26 2016

THEC
Legal Affairs

Table of Contents

<u>Section</u>	<u>Page #s</u>
Abstract	NA
Program Proposal	1 - 12
Section 1: Demonstrated Need	1 - 4
Workforce Needs/Data	1 - 3
Linkages Between Grant Components and Local Needs	3
Alignment to Drive to 55	4
Section 2: Program Plan	4 - 10
Program Timeline	5 - 6
Measureable Objectives for Each Phase of Project	6 - 7
Project Governance	8
Equipment Justification	8 - 9
Section 3: Strength of Partnership	10
Section 4: Budget Plan	10 - 11
Section 5: Sustainability	11 - 12
Plan for Program Sustainability	11 - 12
Plan for Maintaining Partner Communication and Sharing of Resources	12
Section 6: Budget Form	13 - 19
Section 7: Data Lists and Supportive Information	20 - 29
Table 1: 2016 Academic Supply and Occupational Demand Report selected data	20 - 23
Table 2: Occupational Projections (Long-term) for Multiple Occupations in LWIA 4 in 2014-2022	24
Table 3: Advanced Manufacturing Occupational Projections by LWIA	25 - 26
Table 4: Supportive articles with related data	27 - 30
Letters of Collaboration and Support	NA
Memorandums of Understanding and Letters with Local Education Agencies and TN Colleges of Applied Technology	NA

Abstract/Project Summary

The Advanced Manufacturing and Workforce Center is a regional collaborative initiative comprised of advanced manufacturing training opportunities to ensure that the skilled workforce needs of the Roane State service area and beyond are met. Phase 1 was to identify training offered through Roane State Community College (RSCC), Tennessee College of Applied Technology (TCAT) – Harriman, Oak Ridge High School, and Anderson County Career & Technical Center and others that addressed industry needs. Phase 2 (funded with LEAP 1.0) was to enhance the training and expand opportunities in Anderson, Morgan and Roane counties. This proposal, led by East TN Human Resource Agency, expands the opportunities into Campbell, Cumberland and Loudon counties (all are in the RSCC service area and none of which received LEAP 1.0 funding) with dual enrollment, post-secondary and work-based learning opportunities.

Funding for Phase 3 is being requested herein and includes an even bigger and stronger partnership of TCATs, local school systems and private industry. Additionally, it takes advantage of newly designed portable training equipment that can be located in the three targeted counties and training that is transferrable across the institutions of higher education.

In each of the three counties, a team of school system(s), TCAT, ETHRA and Roane State leaders, advised by private industry, will develop a plan to offer at least 4 Mechatronics dual enrollment courses for juniors and seniors in high school that will result in preparedness to take the exam for the Siemens® Level 1 Mechatronics Assistant certification. Post-secondary educational opportunities include training at RSCC toward a Mechatronics Certificate or AAS Degree and industry-recognized certifications such as the Siemens® Level 1 Mechatronics Assistant, Siemens® Level 2 Mechatronics Associate and FANUC Material Handling Robotics. [This is available for non-traditional and traditional students, regardless of whether they took dual enrollment classes prior to high school graduation.] Students also have the option of continuing their education for a certificate or diploma at their local TCAT in an industrial maintenance or electricity program in each respective county. These TCAT graduates can then go directly to work or continue their education at RSCC in the Mechatronics program. Even without additional post-secondary education, high school graduates completing the Mechatronics dual enrollment courses will be better prepared and possess valued industry skills to go directly to work.

Critical support components for the expansion of training to meet industry needs will be a Work-Based Learning (WBL) component and an On-the-Job Training (OJT) component (funded by ETHRA). These options will provide opportunities for students taking advantage of the training components described above to gain valuable work experience.

The provision of the necessary equipment to support Phase 3 is critical to success. With portable equipment and a strong local partner team, the equipment use will be optimized with a sharing plan that includes local high schools, the local TCATs, the Cumberland Business Incubator and RSCC's Mechatronics (credit) and RSCC's Workforce Development (non-credit) training. This will not only allow for the offering of Mechatronics dual enrollment courses, but also support TCAT training to high school students such as the Certified Production Technician and other high school classes. Because the equipment is portable, it can also be used to provide customized, industry-requested training in local TCATs, RSCC sites, the Cumberland Business Incubator, or even on the premises of local industry.

The project will be managed through the RSCC Division of Math and Sciences with Dean Markus Pomper and Mechatronics Program Director Gordon Williams serving as Project Co-Directors. Overall project management will ensure the partners and industry representatives in each county meet to optimize equipment use and training provision, implement WBL opportunities at RSCC and with the partner schools, work with ETHRA on OJT opportunities, manage the budget, oversee purchasing, maintain equipment and inventory, project reporting, budget management, and more.

Section 1 - Demonstrated Need

Workforce Needs/Data:

THEC/University of TN Data: The 2016 Academic Supply and Occupational Demand Report¹ highlights manufacturing as a growth industry in Tennessee with the most in-demand career fields. In Tennessee, the Precision Production Pathway Program of Study is projected to have an annual deficit of 2,633 prepared workers and Production Operations and Maintenance an annual deficit of 1,745.² This report demonstrates the growth in other occupations for which training in this project addresses. An expanded list is in Data Lists Table 1. In the TN Economic Outlook Spring 2016³, UT experts continue to project growth in manufacturing employment rates.

TN Dept. of Labor & Workforce Development (TDOLWD) Data: TDOLWD projects a continued growth through 2022, with job openings anticipated for every year, in occupations related to advanced manufacturing in LWDA 4. This area encompasses Cumberland, Campbell and Loudon counties, as well as surrounding counties in which the residents of the targeted counties work. This increase includes jobs such as Other Installation and Maintenance/Repair Workers (165 annual average openings/year with an average annual 3.5% growth rate); Metal/Plastic Workers (125 openings/year with a 1.0% growth rate); and Fabricators (255 openings/year with a 1.5% growth rate). An expanded list is provided in Data Lists Table 2. *LWIA 4 Hot Careers* includes team assemblers, maintenance and repair workers and industrial machinery mechanics.⁴ LWIA 4 includes Campbell, Cumberland and Loudon counties and many counties where their residents go to work. *LWIA 7 Hot Careers* includes team assemblers and maintenance and repair workers. This includes Putnam County/Cookeville where many Cumberland County citizens work.⁵ *LWIA 3 Hot Careers* includes maintenance and repair workers.⁶ LWIA 3

¹ TN Higher Education Commission. (2016). *Academic Supply and Occupational Demand Report in Tennessee*. Retrieved from https://www.tn.gov/assets/entities/thec/attachments/SupplyandDemand_011415.pdf.

² TN Higher Education Commission. (2016). *Academic Supply and Occupational Demand Report in Tennessee*, pp 15. Retrieved from https://www.tn.gov/assets/entities/thec/attachments/SupplyandDemand_011415.pdf.

³ The University of Tennessee. Boyd Center for Business and Economic Research. (2016). *Tennessee Business and Economic Outlook: The State's Economic Outlook Report spring 2016*. Retrieved from <http://cber.haslam.utk.edu/tefs/spr16.pdf>.

⁴ Tennessee Department of Labor and Workforce Development. (2016). *Hot Careers to 2022. LWIA 4: Anderson, Blount, Campbell, Cumberland, Loudon, Morgan, Monroe, Roane, and Scott Counties*. Retrieved from https://www.tn.gov/assets/entities/labor/attachments/lwia4_2020outlooks.pdf.

⁵ Tennessee Department of Labor and Workforce Development. (2016). *Hot Careers to 2022. LWIA 7: Cannon, Clay, DeKalb, Fentress, Jackson, Macon, Overton, Pickett, Putnam, Smith, Van Buren, and White Counties*. Retrieved from https://www.tn.gov/assets/entities/labor/attachments/lwia7_2020outlooks.pdf.

⁶ Tennessee Department of Labor and Workforce Development. (2016). *Hot Careers in 2022. LWIA 3: Knox County*. Retrieved from https://www.tn.gov/assets/entities/labor/attachments/lwia3_2020outlooks.pdf.

is Knox County/Knoxville where many Campbell and Loudon county residents work. Manufacturing technician job projections for LWIA 4 and LWIA 3 project positive growth including manufacturing production technicians, industrial engineering technicians and machinery workers, and electro-mechanical technicians. See Table 3 for a more exhaustive list.

Tennessee Department of Economic and Community Development (TNECD) Data: TNECD's Campbell County Profile⁷ shows *manufacturing* as the 4th largest employer with 1,512 jobs. *Advanced manufacturing* is the 2nd largest employment "key cluster". TNECD also lists Campbell as a distressed county.⁸ TNECD's Cumberland County Profile⁹ demonstrates that 6 of the top 10 employers are *manufacturing* and that *manufacturing* is the 2nd largest employer. *Advanced manufacturing* is the largest employment "key cluster". TNECD's Loudon County Profile¹⁰ shows *manufacturing* as the leading employer and *advanced manufacturing* as the leading "key cluster".

Other Supporting Data: The Strengthening the East TN Region 2020 Report supports the conclusions above and documents the worker travel patterns from Campbell to Anderson and Knox counties and from Loudon to Knox and Monroe.¹¹ It also documents the importance of workers moving from low skills jobs in Advanced Manufacturing to the middle skills occupation ladder (with a post-secondary degree) in order to increase their median wages by over \$9/hour.¹² One of the conclusions is LWDA 4 has a density of middle skill jobs 21% higher than the nation.¹³ This supports the investment of funding into middle skill jobs in the area. Recent press releases (see Table 4 in Data Lists) demonstrate job growth in the 3 targeted counties as well as in counties from which workers in the targeted counties go to work. This includes Cumberland's CoLinX adding 150 jobs, Loudon's Del Conca adding 40 jobs, Morgan Olsen expanding in Loudon adding 400 to 500 jobs, Denso expanding in nearby

⁷ Tennessee Department of Economic and Community Development. (April 2016). *Campbell County Profile Tool*. Retrieved from <http://www.tnecd.com/county-profiles/>.

⁸ Tennessee Department of Economic and Community Development. (July 2016). *Distressed Counties Map*. Retrieved from <http://www.tnecd.com/files/407/distressedcountiesmap.pdf>.

⁹ Tennessee Department of Economic and Community Development. (April 2016). *Cumberland County Profile Tool*. Retrieved from <http://www.tnecd.com/county-profiles/>.

¹⁰ Tennessee Department of Economic and Community Development. (April 2016). *Loudon County Profile Tool*. Retrieved from <http://www.tnecd.com/county-profiles/>.

¹¹ Nashville Area Chamber of Commerce Research Center. (2016). *Strengthening the East Tennessee Region 2020: Building a Vital Workforce to Sustain Economic Growth and Expand Opportunity for Local Workforce Development Area 4*, pp 10. Commuting Patterns. U.S. Census Bureau (2014).

¹² Nashville Area Chamber of Commerce Research Center. (2016). *Strengthening the East Tennessee Region 2020: Building a Vital Workforce to Sustain Economic Growth and Expand Opportunity for Local Workforce Development Area 4*, pp 16. Career Pathways in Leading Industries. EMSI (2016).

¹³ Nashville Area Chamber of Commerce Research Center. (2016). *Strengthening the East Tennessee Region 2020: Building a Vital Workforce to Sustain Economic Growth and Expand Opportunity for Local Workforce Development Area 4*, pp 12.

Blount (500 jobs) and Meigs (400 jobs) counties (both adjacent to Loudon), JTEKT (50 jobs) and Yamaha (150 jobs) expanding in Monroe County (adjacent to Loudon), Toho Tenax (60 jobs) expanding in Roane County (adjacent to Cumberland and Loudon) and other advanced manufacturing plant job growth announcements including in Knox (next to Campbell and Loudon counties).

Linkages Between Grant Components and Local Needs:

Academic Program Expansion with Required Equipment into High Demand Counties: The workforce and labor market data (Section 7 Tables 1 – 3), employer letters (attached at end), supportive articles (Section 7 - Table 4), etc., demonstrate the need for expansion of Mechatronics and related training into the targeted counties. MOUs/letters from local school systems show the need for college-based dual enrollment offerings for students interested in technical education. Career Technical Education (CTE) Directors served on the grant team and expressed the need for engaging high school students in hands-on and meaningful education and use of high-tech equipment while in high school. Employers have documented in the attached letters their plans for job growth and need to fill positions as a result of turnover. Their letters express in detail their need for hiring technician positions with the technical skills that are addressed in this project. Also employers expressed the need for employees with the soft/employability skills that are imbedded in the training included in this project. The Chambers are very supportive of this project in order to build an educated workforce through dual enrollment, traditional and non-credit training that incentivizes industry growth and relocation into the area. They were particularly excited about the opportunities made available for work-based learning and on-the-job training components included in the project.

Work-Based Learning (WBL) Program: The WBL is described in Section 2. As shown in the letters of collaboration, WBL is a critical component to prepare students to become effective, skilled employees in advanced manufacturing careers. The Workforce Investment Opportunity Act (WIOA) funded On-the-Job Training (OJT) component is another means to ensure employers hire workers with the full set of skills (after OJT completion) they need to be productive on the job and, when needed, receive support to help train the workers on the job. Both programs provide for case-management to ensure workers are meeting employer expectations and demonstrate required soft skills.

Alignment to Drive to 55: The project is aligned with/enhances the initiative with the following components:

- Expand the opportunities into 3 counties for industry-demanded Mechatronics and related training that result in post-secondary credentials and industry-recognized certifications. The programs offered will often serve a group of students who would otherwise not pursue post-secondary education.
- Increase the number of secondary education students that seek RSCC's Mechatronics training and/or TCATs industrial maintenance/electricity or related training through clear pathways from high school. The implementation of dual enrollment will further strengthen and shorten this pathway for students to achieve an industry recognized credential and secure a job in a related field.
- Enhance the capacity/number of students that can be trained in RSCC's Mechatronics program, TCATs industrial maintenance/electricity or related programs that shore up industry needs for such skills.
- Provide a streamlined pathway for students which includes a seamless transition between training at TCATs, RSCC's Mechatronics program, and meaningful employment in advanced manufacturing.

Section 2 – Program Plan

The overall concept of the project is to expand Mechatronics related training into the 3 targeted counties. Programs will be focused on offering dual enrollment courses for high school students that will result in completion of 4 to 6 Mechatronics courses with curriculum designed to prepare them to complete the Siemens® Level 1 Mechatronics Assistant certification exam. These students will be prepared to go to work as entry level technicians, but will be encouraged to continue their education at either RSCC to complete their Mechatronics Certificate or AAS Degree or at a TCAT to complete a certificate or diploma in a related field. TCAT students can then continue at RSCC to earn their AAS Degree if they desire. Programs will be customized by county to meet local industry needs. In Campbell County, the RSCC Mechatronics courses will be offered at the two local high schools and students can continue their post-secondary training at TCAT-Jacksboro in Industrial Electricity or RSCC's Mechatronics program in nearby Clinton. In Cumberland County, Mechatronics dual enrollment courses will be offered to students at the 2 high schools. Mechatronics courses for post-secondary students will be offered at the Cumberland Business Incubator (CBI) and may lead to completion of an RSCC Certificate in Mechatronics. The CBI will offer workshops for local entrepreneurs and possibly use the equipment in their summer youth camp

programs. In Loudon County, the Mechatronics courses will be offered to students from the 2 area high schools at the Loudon County Technology Center (LCTC) which is coordinated by TCAT – Harriman. The school systems have committed to make transportation arrangements for students to the LCTC. RSCC Workforce Development and TCATs will meet customized needs for employer and incumbent worker non-credit training.

Program Timeline:

Sep-16	Grant awarded - Sept. 14 Outreach: Press Release targeted in surrounding counties announcing Leap 2.0 award.
Oct-16	Governance: Local County Teams meet for scheduling and planning for course offerings, recruitment at high schools, TCAT & RSCC (traditional & non-credit) and create rotation plan for equipment. RSCC and TCATs begin discussion of transfer mechanisms from TCAT Curriculum to RSCC Courses and vice versa. Equipment: Equipment ordered. RSCC Traditional Classes: Begin recruiting students for their program and Spring 2017 classes. TCAT Programs: TCATs begin recruiting for students beginning in Summer 2017.
Nov-16	Governance: Scheduling in each county for offerings at CTEs, TCAT and RSCC; Instructor Training: High School CTEs commit to 1 instructor for Siemens® Level 1 training. Outreach: Manufacturing Day event held at a facility in one participating county. RSCC Workforce Development/non-credit: Classes scheduled and promoted to employers to meet incumbent worker and other demand. Ongoing throughout grant.
Dec-16	Instructor Training: Register dual enrollment CTE teachers for Siemens® Training.
Jan-17	RSCC Traditional Classes: RSCC to begin recruiting students for Summer 2017. Spring 2017 classes begin at three RSCC locations (one course each: MECH 1400 or 1600) RSCC Workforce Development/non-credit: Classes scheduled and promoted to employers to meet incumbent worker and other demand. Ongoing throughout grant.
Feb-17	Dual Enrollment Classes: High Schools recruit rising Juniors and Seniors for Fall 2017-Spring 2018 Mechatronics classes; register students as appropriate.
Mar-17	Instructor Training: RSCC to begin planning for June training; invite dual enrollment HS teachers. RSCC Traditional Classes: Summer and Fall Schedules available; recruiting and registration begins. WBL/OJT: Student recruitment for WBLs and OJTs (in coordination with ETHRA); placement with employers. Recruitment is ongoing.
Apr-17	RSCC Traditional Classes: RSCC Spring 2017 classes end. Governance: Local LEAP teams hold biannual meeting.
May-17	Equipment: Equipment received at RSCC Clinton facility, tested and approved. RSCC Traditional Classes: Summer 2017 classes start; 1 course at each of 3 locations offered.
Jun-17	Instructor Training: RSCC to hold training event for future instructors at Clinton facility; provide instructors with course documents. TCAT Program: TCAT offers programs. Ongoing with continuous admission/ graduation. WBL/OJT: Small pilot cohort of WBL students placed for 2-month WBL experience.
Jul-17	Equipment: Equipment distributed to each site. Instructor Training: CTE Instructors to participate at Siemens® training (Week 1). RSCC Traditional Classes: RSCC Summer 2017 classes end.
Aug-17	Instructor Training: CTE Instructors to participate at Siemens® training (Week 2). Dual Enrollment Classes: High School fall classes start at 6 high schools. RSCC Traditional Classes: RSCC Fall 2017 classes start. WBL: Cohort from June ends WBL experience. Feedback from employers received.
Sep-17	WBL/OJT: New cohort of WBL students placed for 3-month experience. OJTs planned with ETHRA

	(ongoing throughout grant).
Oct-17	Outreach: Manufacturing Day event held at a facility in one participating county.
Nov-17	Governance: Local LEAP teams hold biannual meeting.
Dec-17	Equipment: Equipment rotation between partners in each county. RSCC Traditional Classes: Fall 2017 classes end. WBL: Cohort from September ends its 3-month experience.
Jan-18	Dual Enrollment: High School CTE Classes start at 6 high schools with 1 new class at each location. RSCC Traditional Classes: Spring classes start. RSCC Workforce Development/non-credit: Classes scheduled and promoted to employers to meet incumbent worker and other demand. Ongoing throughout grant.
Feb-18	Dual Enrollment: High Schools recruit rising Juniors and Seniors for Fall 2018-Spring 2019 Mechatronics classes; register students as appropriate. WBL: New cohort of WBL students placed for 3-month experience.
Mar-18	RSCC Traditional Classes: Summer and Fall Schedules available; recruiting and registration begins.
Apr-18	Traditional RSCC Classes: Spring classes end. RSCC fall schedule available and student recruitment/enrollment begins. Prospective graduates from HS are recruited into the RSCC program or TCAT program. Governance: Local LEAP teams hold biannual meeting.
May-18	WBL: Cohort from February ends its 3-month experience. RSCC Traditional Classes: Summer classes start; at least 1 course at each of 3 locations offered.
Jun-18	Equipment: Equipment returned to Clinton for maintenance. WBL: New Cohort of WBL students placed for 2-month experience.
Jul-18	RSCC Traditional Classes: Summer classes end.
Aug-18	Equipment: Equipment re-distributed. Dual Enrollment: High School CTE Classes start at 6 high schools. RSCC Traditional Classes: Fall classes start.
Sep-18	WBL: New cohort of WBL students placed for 3-month experience.
Oct-18	Outreach: Manufacturing Day event held at a facility in two of the participating counties.
Nov-18	Governance: Local LEAP teams hold biannual meeting.
Dec-18	Equipment: Equipment rotation between partners in each county. RSCC Traditional Classes: Fall 2018 classes end. WBL: Cohort from September ends its 3-month experience.
Jan-19	Dual Enrollment: High School CTE classes start at 6 high schools with 1 new class at each location. RSCC Traditional Classes: Spring classes start. RSCC Workforce Development/non-credit: Classes scheduled and promoted to employers to meet incumbent worker and other demand. Ongoing throughout grant.
Feb-19	Sustainability: High Schools recruit rising Juniors and Seniors for Fall 2018-Spring 2019 Mechatronics classes; register students as appropriate.
Mar-19	Governance: Final LEAP report submitted. Sustainability: Local LEAP Teams meet to finalize sustainability plans including future training, sharing of equipment, and more.

Measureable Objectives for each Phase of Project:

Measurable Objective	Metric
Year One: September 2016-June 2017	
Objective 1.1: Dual enrollment high school teachers	Six (6) high school teachers will successfully complete the

will be adequately prepared to teach Mechatronics courses to dual enrollment students.	instructor training provided by RSCC.
Objective 1.2: Maintain enrollment numbers in TCAT programs (Industrial Electricity/Industrial Maintenance).	At least 10 students will be enrolled at each of the TCAT locations at any given time.
Objective 1.3: Maintain enrollment numbers in Roane State's traditional Mechatronics courses.	Students will enroll in 216 credit hours of Mechatronics courses taught at Roane State.
Objective 1.4: Increase on-the-job and work-based training opportunities for Mechatronics students.	Five (5) students will be placed in OJT or WBL.
Year Two: July 2017-June 2018	
Objective 2.1: Dual enrollment high school teachers will be adequately prepared to teach Mechatronics courses to dual enrollment students.	Six (6) high school teachers will successfully complete SIEMENS® Level 1 training.
Objective 2.2: Increase the number of Campbell, Cumberland, and Loudon County high school students who enroll in dual enrollment Mechatronics courses.	Across the six participating high schools, dual enrollment students will enroll in 432 credit hours of Mechatronics courses.
Objective 2.3: Increase the number of Mechatronics dual enrollment students in Campbell, Cumberland, and Loudon County high schools who enroll in a Mechatronics program at Roane State or at a TCAT.	At least 10 graduating seniors who took dual enrollment Mechatronics classes will apply for admission at RSCC or at a TCAT for a related program.
Objective 2.4: Increase the number of students who complete a related certificate or diploma at a TCAT who enroll in Roane State's certificate or AAS programs in Mechatronics.	Roane State's Mechatronics programs will enroll at least 10 students who complete related certificates or diplomas at a TCAT.
Objective 2.5: Maintain enrollment numbers in TCAT programs (Industrial Electricity/Industrial Maintenance).	At least 10 students will be enrolled at each of the TCAT locations at any given time.
Objective 2.6: Maintain enrollment numbers in Roane State's traditional Mechatronics courses.	Students will enroll in 270 credit hours of Mechatronics courses taught at Roane State.
Objective 2.7: Increase on-the-job and work-based training opportunities for Mechatronics students.	Twenty (20) students will be placed in OJT or WBL.
Year Three: July 2018-March 2019	
Objective 3.1: Increase the number of Campbell, Cumberland, and Loudon County high school students who enroll in dual enrollment Mechatronics courses.	Across the six participating high schools, dual enrollment students will enroll in 432 credit hours of Mechatronics courses.
Objective 3.2: Increase the number of Mechatronics dual enrollment students in Campbell, Cumberland, and Loudon County high schools who enroll in a Mechatronics program at Roane State or at a TCAT.	At least 30 dual enrollment students will indicate an interest in continuing their education at either RSCC or a TCAT in a related field.
Objective 3.3: Increase the number of students who complete a related certificate or diploma at a TCAT who enroll in Roane State's certificate or AAS programs in Mechatronics.	Roane State's Mechatronics programs will enroll at least 10 students who complete related certificates or diplomas at a TCAT.
Objective 3.4: Maintain enrollment numbers in TCAT programs (Industrial Electricity/Industrial Maintenance).	At least 10 students will be enrolled at each of the TCAT locations at any given time.
Objective 3.5: Increase on-the-job and work-based training opportunities for Mechatronics students.	Ten (10) students will be placed in OJT or WBL.

Project Governance: Project governance will be accomplished through these components:

- The RSCC Mechatronics academic program has an established Advisory Committee that will continue to provide oversight for curriculum development, equipment needs, etc. This committee meets biannually. Members include local businesses such as CNS/Y-12, Aisin and Techmer PM and local high school CTE Directors. TCATs have similar committees to provide oversight for their programs.
- The LEAP 2.0 program will have 3 *LEAP local county teams* comprised of leadership from RSCC, TCAT, ETHRA and high schools. This team will ensure effective scheduling of equipment and that industry requests for training are met. The team will also ensure all partners understand the options for continuation of training for students from high school to RSCC and/or TCAT. The team, in coordination with the Project Co-Directors, will ensure effective implementation of WBLs and OJTs.
- An RSCC oversight team will ensure the project is on task, schedule and budget through quarterly meetings.
- The Project Co-Directors will conduct project management, coordinate efforts with educational, industry and economic development partners, and report outcomes to the granting agency – ETHRA.

Equipment Justification: The equipment consists of 3 identical sets of training equipment, 1 for each targeted county. The equipment is portable (suitcase size) and can be easily moved. The primary purpose of the equipment is to provide hands-on training in order to prepare students to continue their post-secondary education, for entering the workforce as entry-level skilled mechatronics technicians, and for their successful completion of the Siemens® Level 1 Mechatronics Assistant exam. The topics covered in this exam roughly fall into 4 disciplines: Electrical components, Hydraulics/Pneumatics, Electric Motors and Mechanics, and Programmable Logic Controls (PLCs). To support the training and exam, each county's training equipment consists of four electrical trainers (includes two pieces of equipment – "electric circuits" and "electric relay control"), four pneumatic training units, four mechanical training units and four PLC training units. A mechatronics system is a combination of electrical circuits, hydraulics/pneumatics, motors and PLCs. The curriculum teaches the interaction of these types of equipment. A tabletop mechatronics training system is included in each county's equipment list. This tabletop system is a miniature assembly line and allows students to study the interplay of the various components, and practice troubleshooting techniques of a mechatronics system as a whole, rather than of its individual parts. The

purpose of the training on this equipment is to prepare students in the fundamentals of the four principal areas of mechatronics, and to then equip them with the skills to troubleshoot and repair automated manufacturing equipment. This equipment replicates the equipment found in the field in modern manufacturing facilities. Several of our industry partners have commented on the similarity of our training equipment to their actual production line methods. The equipment list for each county includes a set of 20 laptops (one for each trainer) and subscription to an online, “e-learning” training system. Each county also will receive 2 air compressors for use with the pneumatic trainers along with other peripheral equipment (cables, interfaces, etc.). The purpose of the computer equipment and software is to provide students with training that identifies their current skills and leads them forward. This e-learning system has appealing graphics, 3D simulations, videos, and complete explanations that combine strong interactivity to develop technical skills and is specifically designed for high school students. This training integrates troubleshooting concepts throughout and across the courses and gradually builds problem-solving and troubleshooting abilities incorporating the complexity found in real world manufacturing situations. The equipment for each county may be rotated among the partners, allowing each to focus the training on one of the four areas within mechatronics at a time. Also included is a supplemental contingent of 2 trainers of each type and 10 additional computers to be used to respond rapidly to increased training needs, such as higher than expected demand for training, non-credit training for incumbent workers, and to replace equipment in need of repair. Maintenance and repair of the equipment will be covered initially through the warranty on the equipment. For the most part, repairs beyond that and regular maintenance can be handled by the instructors and completed as a part of the student learning experience. Repairs needing funding will be paid for initially through the grant and then with RSCC funds.

Work-based Learning (WBL) and On-the-Job Training (OJT): The WBL component will be available to students from or taking classes in one of the 3 targeted counties. The component will be funded at \$70,000 to serve approximately 35 students over the grant life. Students eligible will include those in RSCC’s Mechatronics program (dual enrollment and post-secondary) and TCATs’ industrial maintenance/electricity and related programs. The WBL will be administered under the rules detailed in the LEAP 2.0 RFP. The “home” institution (RSCC, TCAT, high schools) will provide specific oversight and student “case management” for the WBLs in cooperation with the project leadership and appropriate faculty. The Project Co-Directors will work with each *LEAP local county team* to

ensure the opportunities are available across all 3 targeted counties. In addition to the grant-funded WBLs, ETHRA Workforce Development has committed funding of \$30k for 15 OJTs over 3 years (5/year at approx. \$2k each). In OJTs the graduate is hired by the employer for long-term employment. The focus will be WIOA eligible graduates (same population demographics as WBLs) that have completed training. This important component will help some of the graduates needing more work experience/hands-on skills for successful long-term employment.

Section 3 – Strength of Partnership

The proposal has been developed by a strong partnership of higher education institutions, economic development/chambers of commerce, secondary education, and employers/industry representatives. Each partner has roles and strengths that are key to ensuring success. These are documented in the attached letters:

- Roane State Community College (RSCC): Project management/oversight, training delivery, equipment purchases, student recruitment, objectives/metrics assessment, local county teams' coordination, facilitating Advisory Board, instructor training coordination, development/monitoring of articulation agreements, etc.
- East TN Human Resource Agency (ETHRA): Project Management Oversight, provision of OJT funding and case management, and provision of America's Job Center Services to help with placement of graduates.
- TN Colleges of Applied Technology (TCAT): Serve on LEAP local county teams, provide training opportunities through industrial maintenance/electricity and related programs, implement WBLs and more.
- Employers: Play a strong and critical role on the Advisory Boards to ensure the programs are aligned with workforce needs, provide WBLs and OJTs opportunities, and more. See attached letters.
- School Districts/CTE Programs: Ensure dual enrollment courses are implemented, students are encouraged to participate and transfer to RSCC's Mechatronics program and/or TCAT programs, implement WBLs, and more.
- Chambers of Commerce/Economic Development Organizations: Link potential/new/growing industry with skilled worker training, promote training and more.

Section 4 – Budget Plan

The majority of the proposed grant is for purchase of mechatronics training equipment, which will enable RSCC and its partners to offer training that leads to the coveted Siemens® Level 1 Mechatronics Assistant Certification. This is accomplished with a combination of 4 core classes, which may be offered either in a dual enrollment

format, as part of a TCAT curriculum, or in a traditional college-credit setting. The equipment will also support other training such as TCAT's Certified Production Technician. Equipment for each county includes 1 tabletop mechatronics system and training equipment for the 4 core classes. The tabletop system simulates an automated assembly line, and includes electrical, mechanical, pneumatic and digital components, as well as various sensors and a small robot. This system is shared among the partners in each county. In-depth training for the 4 classes requires training equipment for electric circuits, pneumatics, mechanical systems and PLCs. The training equipment for each course can be rotated among the partners in each county, allowing each partner to offer all 4 core courses over the course of several semesters. The equipment is rounded out with a complement of 20 computers and 30 software licenses for an eLearning system. This system will be used primarily in high schools in order to supplement the Siemens® curriculum, to teach the LabVIEW® programming language, or to facilitate teaching of the Certified Production Technician (CPT) course. In addition to 3 identical sets of training equipment (one for each targeted county), we plan to purchase additional equipment, which may be used at any location in the targeted counties, in order to accommodate an unanticipated demand, to allow another partner to join, to be used in case equipment needs repair, or to offer on-demand non-credit training. Because a large portion of the courses will be taught as dual enrollment classes, we budgeted for 6 high school CTE teachers to participate in the Siemens® Level 1 Instructor training. The purpose of this training is to establish a cadre of instructors in each county who are qualified to teach the Siemens® curriculum. The training programs allow for the use of WBL credit within the LEAP 2.0 guidelines. We intend to implement this component at approximately \$2k/term to entice students who are currently not employed in a manufacturing job to transition by way of the WBL experience.

Section 5 - Sustainability

Plan for Program Sustainability: The key to program sustainability is to ensure that it is developed based on employer/industry needs. This will ensure students enroll based on the high placement rates and demonstrate to employers that we are responsive to their needs, value their input and are developing workers with the skills they require. In turn, this will drive their future support for the program. A major employer role was included from the very beginning of the RSCC Mechatronics program and has been integral to the TCAT programs through their advisory boards. The attached letters clearly demonstrate that employers are engaged and supportive of this

endeavor to meet their needs for a skilled workforce. The partners in this grant have not been “forced” to work together. They each have made a commitment to working on this grant as a part of their long-term working relationships and many other related projects because it is the “right” thing to do to enhance their respective opportunities and support overall economic development and workforce growth. Each partner already has and will continue to provide staff, facilities, training, and more, to support the growth of the advanced manufacturing industry. RSCC is demonstrating a commitment to sustainability by funding resources to support the program, director and oversight. The Mechatronics program was initially funded with a U.S. Department of Labor grant, then through the LEAP 1.0 grant. The team is confident, based on the partnerships that have been developed and the demonstrated need for such a program, that future grant funding can be attained to fund further growth. For example, RSCC is currently pursuing a National Science Foundation grant to enhance the general education/soft skills component of its mechatronics curriculum and another U.S. Dept. of Labor grant. Prior to this project, employers/industry have been supportive by donating equipment, subject-matter expertise, serving on the Advisory Board, etc. Employers have committed in the attached letters to ongoing support and are expected to continue that support well beyond the life of the grant.

Plan for Maintaining Partner Communication and Sharing of Resources: The sole purpose of The Advanced Manufacturing and Workforce Development Center regional collaborative is to share resources and optimize the delivery of training to students to meet employer demand. Leaders from the secondary schools, RSCC and TCATs have listened to business and industry in developing this plan for Phase 3 and will continue to do so well after this grant as additional phases are designed and implemented. The Advisory Committees established to support RSCC Mechatronics program and the TCAT programs meet regularly and share information. Their input will continue to be valuable in maintaining an up-to-date and viable program responsive to business and industry needs and rapid developments in the field of Advanced Manufacturing. The Project Co-Directors will ensure regular contact with other key partners at the chambers/economic development, schools systems, East TN Development District and East TN Human Resource Agency. With phase 3, the implementation of LEAP local county teams will lead to a better understanding of training opportunities within and near each county, ensure effective scheduling and use of the LEAP 2.0 funded portable equipment, and facilitate sharing of best practices across the area.

Section 6 – Budget

Section 6: Project Budget				
GRANT BUDGET				
LEAP 2.0				
The grant budget line-item amounts below shall be applicable only to expenses incurred during the following applicable period:				
<div style="display: flex; justify-content: space-between;"> BEGIN: Sept 14, 2016 END: March 13, 2019 </div>				
POLICY 03 Object Line-item Reference	EXPENSE OBJECT LINE-ITEM CATEGORY ¹	GRANT CONTRACT	GRANTEE PARTICIPATION	TOTAL PROJECT
1, 2	Salaries, Benefits & Taxes	0.00	0.00	0.00
4, 15	Professional Fee, Grant & Award ²	\$70,000.00	0.00	\$70,000.00
5, 6, 7, 8, 9, 10	Supplies, Telephone, Postage & Shipping, Occupancy, Equipment Rental & Maintenance, Printing & Publications	\$60,125.00	0.00	\$60,125.00
11, 12	Travel, Conferences & Meetings	\$14,328.00	0.00	\$14,328.00
18	Other Non-Personnel ²	\$49,800.00	0.00	\$49,800.00
20	Capital Purchase ²	\$708,590.00	0.00	\$708,590.00
22	Indirect Cost	\$72,227.44	0.00	\$72,227.44
24	In-Kind Expense	0.00	0.00	0.00
25	GRAND TOTAL	\$975,070.44	0.00	\$975,070.44

¹ Each expense object line-item shall be defined by the Department of Finance and Administration Policy 03, *Uniform Reporting Requirements and Cost Allocation Plans for Subrecipients of Federal and State Grant Monies, Appendix A.* (posted on the Internet at: www.state.tn.us/finance/act/documents/policy3.pdf).

² Applicable detail follows this page if line-item is funded.

Salaries, Benefits and Taxes

Salaries, Benefits and Taxes: There are no salaries or related costs planned for a Program Director or other administrative staff budgeted in this proposal. The proposal builds on a previously funded LEAP grant, which paid the initial 16 month salary for the Program Director. The Mechatronics Program Director's salary is now a recurring line item in Roane State's budget. Because the administration of the LEAP 2.0 project falls within the purview of the Mechatronics Program Director, no additional grant funding for salaries or related costs are requested.

Professional Fee, Grant & Award

\$70,000 is planned in support of the Work-Based-Learning Component of the LEAP 2.0 project. The team has found that some dislocated workers and students with little work experience and significant barriers are hard to place. The dislocated workers are typically workers who have long held jobs that require little or no formal training or are in a totally different career field. Through longevity at their current position they are currently earning wages that are above the typical entry-level wages for graduates from the programs. Despite the fact that graduates from the programs can expect their salaries to rise within 6-12 months, and to eventually earn more than their salary at job dislocation, taking a temporary decrease in pay is enough of a deterrent for many dislocated workers to forgo a change to a potential career in manufacturing. We will implement a WBL component and will use LEAP 2.0 funds to help fund (per LEAP 2.0 guidelines) the cost to employers for salaries in order to facilitate their job placement. We expect that employers will support and 5 students will avail themselves of a WBL component in each Summer, Fall and Spring term between Summer 2017 and Spring 2019, for a total of 35 students being provided with a \$2,000 per student employer reimbursement. Similarly, students with little or no work experience often need the support of a WBL opportunity to gain additional hands-on experience and develop/demonstrate the needed soft/employability skills to be successful in long-term manufacturing employment.

In summary, Work-Based Learning assistance to companies for 35 participants for life of the grant with amount per participant not to exceed \$2,000 per participant. Total \$70,000.

Supplies, Telephone, Postage & Shipping, Occupancy, Equipment Rental & Maintenance, Printing & Publications

\$60,125 is planned for supplies and maintenance. Each targeted county will receive a set of 20 laptop computers (\$15,000 per county), and two air compressors (\$750 per county) for a total of \$47,250. One additional air compressor (\$375) and 10 additional laptop computers (\$7,500) are requested as part of the expanded capacity/back-up component. This equipment will be used flexibly in any one of the targeted counties to allow for on-demand non-credit training, for additional partners who join the program once it is under way, for compensating for high demand and in case computers or other components need repairs.

The capital purchases (see below) come with a six-month warranty. The equipment is robust and students can often perform minor repairs as part of their training. \$5,000 is planned in the grant for repairs and replacement parts. Roane State and/or partners will cover the cost of additional repairs and maintenance.

Description	Qty	Amount
Air Compressor \$375/each	7	2,625.00
Maintenance and Repair Cost		5,000.00
Inspiron 15 7000 2-in-1 @ \$750/each	70	52,500.00
Total Supplies		60,125.00

Travel, Conferences & Meetings

A total of \$14,328 for travel expenses. The majority of these are to fund training for six high school teachers (two from each of the three counties) to travel to LaVergne, TN, for Siemens® Level 1 instructor certification training. The training is two weeks in length. Travel to LaVergne is estimated at \$1,513 per person for a total of \$9,078, and includes mileage in personal vehicle for each participant (based on an estimated roundtrip distance of 300 miles at standard mileage rate), per-diem and 8 nights of hotel accommodations.

Also included in this category are \$5,250 in travel expenses for the Mechatronics Program Director to travel to/from collaborating schools, TCATs and industry partners in the targeted three-county area. This figure is based on an assumed travel of 360 miles per month, resulting in monthly travel expenses of \$175, for 30 months.

Description	Qty	Amount
Conferences and Meetings for 3 targeted counties		
Siemens® Training - Mileage – est. 300 miles roundtrip - 2 trips/person @ .57/mile	1200	684.00
Siemens® Training - Meal Per-Diem per week (\$51 - 3 days / \$38.25 - 2 travel days)	4	918.00
Siemens® Training - Lodging (4 nights - 2 trips) \$89/night	16	1,424.00
Total Travel, Conferences & Meeting per targeted location		3,026.00
Total Travel, Conferences & Meeting for 3 targeted locations requested	3	9,078.00
Travel Expenses – Mechatronics Program Director - month \$175/month	30	5,250.00
Total Travel, Conferences & Meeting		14,328.00

Other Non-Personnel

\$49,800 is planned in this category. The budget includes tuition for six high school teachers to participate in the Siemens® level 1 instructor certification training. The tuition is budgeted at current rates of \$6,500 per person for a total of \$39,000. The Siemens® training includes a preparation for instructors to teach a curriculum that is aligned with the Siemens® Level 1 certification.

Each county will receive 30 High School e-learning licenses for a total cost of \$10,800 (\$3,600 per county). In combination with the laptop computers, these licenses are used in support of the Siemens® curriculum, and are particularly tailored to the skill level and preferred learning styles of high school students. They also address soft/employability skills to enhance the training and better meet industry need. The e-learning packages include visual appealing graphics, 3D simulations, videos, complete explanations and use strong interactivity to develop students' technical skills. These are detailed below:

Other Non-Personnel – below items are purchased for 3 targeted counties

Description	Qty	Amount
High School eLearning Program 206-WSHS BLK6 - 15 students at 2 HS	3,600.00	3,600.00
Siemens® Training – Registration (\$6,500/person (\$13,000 per county)	13,000.00	13,000.00
Other Non-Personnel per targeted location		16,600.00
Total for 3 targeted locations requested (\$16,600 x 3)		49,800.00

Capital Purchases

The total requested amount is \$708,590.

The bulk of the requested funds will be spent on capital purchases for training equipment, which will be used on a rotating basis within each of the three participating counties. Each county will receive equipment valued at \$208,946, for a total of \$626,838. The equipment for each county consists of the following:

1. One **tabletop mechatronics system** (\$46,942 each county). This system consists of three stations. In combination, the three simulate an assembly line, and allow the study of sensors, step-diagrams, motors, pneumatic controls and PLCs at a system view. The system can be disassembled into three separate stations, for in-depth study of individual components. This system will be shared among all partners in one county, and may be moved between partners several times each semester. The individual components of the system are enumerated under Section 1 below.
2. Four separate electrical, pneumatic, mechanical and PLC learning systems. Each of these systems will be the principal teaching equipment for one of the four core mechatronics classes for the Siemens® Level 1 certification. This equipment is portable and can be easily moved from one partner's location to another. We anticipate that each system will remain at each partner institution for the duration of one semester, after which the equipment is traded among partners. Please see section 2 below for a specific listing of the components of each of these training systems. Specifically, the equipment consists of the following training systems:
 - a) A set of four identical **electrical circuits learning systems** (total \$48,436 each county). This system is used for teaching the concepts of electrical circuits, current, voltage, relays and electrical safety. Used for MECH 1100 (Electrical Components).
 - b) A set of four identical **mechanical drive and electric motor learning systems** (\$39,800 total each county). This system is used to teach concepts for mechanical components, electrical AC and DC drives, materials, lubrication requirements and safety. Used for MECH 1200 (Mechanical Components).
 - c) A set of four identical **pneumatics learning systems** (\$30,888 total each county). This system is used to teach concepts for electro pneumatic and hydraulic control circuits, data sheets, circuit diagrams, displacement step diagrams and safety. Used for MECH 1300 (Pneumatics/Hydraulics).
 - d) A set of four identical **PLC learning systems** (\$41,380 total each county). This system is used to teach concepts for programmable logic controls, identification of malfunctioning PLCs, troubleshooting techniques and strategies. Used for MECH 1500 (Digital Fundamentals).

3. The budget also includes installation of the equipment (\$1,500 per county). Furthermore, we plan for an expanded capacity/back up repair option for this program, consisting of a set of two of each of the learning systems described in items 2.a)-d) above. (See Section 3 below.) These learning systems will work with the air compressor, and 10 laptop computers stated above in the Supply category. The purpose of this equipment is to be used flexibly in either of the three counties of the service area, in order to compensate for high demand, broken equipment, or in order to allow additional partners to participate in the program later on. This expansion equipment is valued at \$81,752.

Capital Purchases – below items are purchased for 3 targeted counties

Section 1: Table Top mechatronics - Base System for each targeted county

Item No.	Description	Qty	Extended Cost	Total Cost
87-TMS1	Inventory Station - Table Top Mechatronics	1	4,025.00	
870-PTAB10	Table Top Mechatronics Learning System	1	1,716.00	
82-704W	PLC Programming Software for Micro Logix	1	1,350.00	
17373	MicroLogix USB Communication Cable	1	102.00	7,193.00
87-TMS2	Inspection Station - Table Top Mechatronics	1	3,850.00	
870-PTAB10	Table Top Mechatronics Learning System	1	1,716.00	
82-704W	PLC Programming Software for Micro Logix	1	1,350.00	
17373	MicroLogix USB Communication Cable	1	102.00	7,018.00
87-TMS3	Distribution Station - Table Top Mechatronics	1	4,700.00	
870-PTAB10	Table Top Mechatronics Learning System	1	1,716.00	
82-704W	PLC Programming Software for Micro Logix	1	1,350.00	
17373	MicroLogix USB Communication Cable	1	102.00	7,868.00
87-TMS4	Servo Robot Station - Table Top Mechatronics	1	1,690.00	
88-LT2-A	Linear Traverse Axis, Pegasus 40 inch	1	4,782.00	
880-RA2-1-B	Pegasus II Robotic Learning System	1	15,211.00	
88-200-1	Flexible Workstation Package	1	3,180.00	24,863.00

Section 2: Portable Fundamental Learning System

Item No.	Description	Qty	Extended Cost	Total Cost
Electrical Circuits Learning System				
990-ACDC1	Portable AC/DC Electrical Learning System	4	21,828.00	
990-EC1	Portable Electric Relay Control Learning System	4	17,408.00	
96-CT1	Computer Control 1 Learning System	4	9,200.00	48,436.00
Mechanical Drive and Electric Motor Learning Systems				
990-ME1	Portable Mechanical Drives 1 Learning System	4	39,800.00	39,800.00
Pneumatics Learning System				
990-PN1	Portable Pneumatic Learning System	4	30,888.00	30,888.00
PLC Learning System				
990-PS712F	Portable PLC Combined Troubleshooting Learning System - Siemens® S71200	4	41,380.00	41,380.00
Installation	On-Site Installation and Orientation Training	1	1,500.00	1,500.00

Capital Purchase per target county	208,946.00
Total for 3 targeted counties requested	626,838.00

Section 2: Portable Fundamental Learning System - Expandable

Item No.	Description	Qty	Extended Cost	Total Cost
990-ACDC1	Portable AC/DC Electrical Learning System	2	10,914.00	
990-EC1	Portable Electric Relay Control Learning System	2	8,704.00	
96-CT1	Computer Control 1 Learning System	2	4,600.00	24,218.00
990-ME1	Portable Mechanical Drives 1 Learning System	2	19,900.00	19,900.00
990-PN1	Portable Pneumatic Learning System	2	15,444.00	15,444.00
990-PS712F	Portable PLC Combined Troubleshooting Learning System - Siemens® S71200	2	20,690.00	20,690.00
Installation	On-Site Installation and Orientation Training	1	1,500.00	1,500.00
	Capital Purchase for shared/back-up equipment for expanded capacity training, back-ups for equipment failure, etc.			81,752.00
	Grand Total Capital Purchases			708,590.00

Indirect Costs

Indirect costs are planned at 8% as directed in the grant guidance.

In Kind Expense

In Kind Expense is not required in the grant and as such is not documented. However, it should be noted that ETHRA, based on funding availability, plans on funding 5 OJTs per year at a cost of \$2k/OJT for a total of \$30k. Additionally, RSCC and all the partners (including employers) will invest a large portion of time into grant implementation and success.

Section 7 - Data Lists

Table 1

The 2016 Academic Supply and Occupational Demand Report

Demand Data Lists pages 63 to 65

Area
Tennessee
Statewide
Cluster Code
13.10000000

Cluster Title
Precision Production Pathway

Projection Time (Years) = 8
Average Occupational Growth Rate = 1.1

Base Year:
Projected Year
Employment:

2014
2022

Cluster Grade = B
The outlook for this cluster is Very Good.
The growth rate is positive but not above the average for all occupations.
There are more job openings expected annually than there were
training completers in a recent year.

DEMAND DATA							
SOC CODE(S)	SOC TITLE(S)	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth (%)	Annual Median Salary	Usual Education Requirements
499069	Precision Instrument and Equipment Repairers, All	400	440	15	1.2	\$39,738.00	Long-term on-the-job training
511011	First-Line Supervisors of Production and Operating	15,050	15,410	255	0.3	\$50,341.00	Work experience in a related occupation
512041	Structural Metal Fabricators and Fitters	2,130	2,350	110	1.2	\$32,460.00	Moderate-term on-the-job training
512091	Fiber/glass Laminators and Fabricators	760	800	20	0.6	\$28,645.00	Moderate-term on-the-job training
512092	Team Assemblers	51,100	58,360	1,720	1.7	\$29,505.00	Moderate-term on-the-job training
513021	Butchers and Meat Cutters	2,900	2,880	70	-0.1	\$27,619.00	Long-term on-the-job training
514011	Computer-Controlled Machine Tool Operators, Metal	2,600	3,210	145	2.7	\$35,373.00	Long-term on-the-job training
514012	Computer Numerically Controlled Machine Tool Progr	430	570	30	3.6	\$45,313.00	Long-term on-the-job training
514021	Extruding and Drawing Machine Setters, Operators,	1,450	1,590	30	-0.4	\$28,093.00	Moderate-term on-the-job training
514022	Forging Machine Setters, Operators, and Tenders, M	660	670	15	0.2	\$30,386.00	Moderate-term on-the-job training
514032	Rolling Machine Setters, Operators, and Tenders, M	1,080	1,130	25	0.6	\$36,596.00	Moderate-term on-the-job training
514033	Drilling and Boring Machine Tool Setters, Operator	1,630	1,600	40	-0.2	\$33,409.00	Moderate-term on-the-job training
514034	Grinding, Lapping, Polishing, and Buffing Machine	810	780	15	-0.5	\$34,997.00	Moderate-term on-the-job training
514035	Lathe and Turning Machine Tool Setters, Operators,	550	560	10	0.2	\$33,436.00	Moderate-term on-the-job training
514035	Milling and Planing Machine Setters, Operators, an	8,780	10,060	360	1.7	\$38,732.00	Long-term on-the-job training
514041	Machinists	900	1,020	25	1.6	\$38,387.00	Long-term on-the-job training
514051	Metal Refining Furnace Operators and Tenders	150	180	5	2.3	\$23,305.00	Moderate-term on-the-job training
514061	Model Makers, Metal and Plastic	30	30		0.0	\$41,880.00	Moderate-term on-the-job training
*****	*****	30	30		0.0	\$30,158.00	Moderate-term on-the-job training
514081	Multiple Machine Tool Setters, Operators, and Tend	2,440	2,510	55	0.4	\$30,158.00	Moderate-term on-the-job training
514111	Tool and Die Makers	2,620	3,000	65	1.7	\$45,895.00	Long-term on-the-job training
514191	Heat Treating Equipment Setters, Operators, and Te	520	540	10	0.5	\$34,968.00	Moderate-term on-the-job training
514192	Layout Workers, Metal and Plastic	280	290	5	0.4	\$35,606.00	Moderate-term on-the-job training
514192	Layout Workers, Metal and Plastic	160	170	5	0.8	\$31,220.00	Moderate-term on-the-job training
514194	Tool Grinders, Filers, and Sharpeners	280	330	30	2.1	\$27,932.00	Moderate-term on-the-job training
*****	*****	280	330		0.7	\$27,471.00	Moderate-term on-the-job training
516061	Textile Bleaching and Dyeing Machine Operators and	370	390	10	0.1	\$28,687.00	Long-term on-the-job training
*****	*****	50	50		0.0	\$28,687.00	Long-term on-the-job training
516093	Upholsters	1,660	1,620	45	-0.3	\$24,382.00	Long-term on-the-job training
517011	Cabinetmakers and Bench Carpenters	1,470	1,460	10	-0.1	\$28,538.00	Long-term on-the-job training
517011	Cabinetmakers and Bench Carpenters	110	110		0.0	\$24,527.00	Long-term on-the-job training
517021	Furniture Finishers	1,270	1,350	45	0.8	\$24,390.00	Moderate-term on-the-job training
517041	Sawing Machine Setters, Operators, and Tenders, Wo	1,980	1,940	10	-0.3	\$21,968.00	Moderate-term on-the-job training
517042	Woodworking Machine Setters, Operators, and Tender	1,060	1,050	35	0.0	\$21,242.00	Moderate-term on-the-job training
517099	Woodworkers, All Other	1,350	1,300	5	0.0	\$63,263.00	Long-term on-the-job training
518012	Power Distributors and Dispatchers	550	590	20	0.9	\$79,653.00	Long-term on-the-job training
518013	Power Plant Operators	720	720	20	0.0	\$54,323.00	Long-term on-the-job training
518021	Stationary Engineers and Boiler Operators	670	680	20	0.2	\$27,593.00	Moderate-term on-the-job training
519022	Grinding and Polishing Workers, Hand	440	390	10	-1.5	\$33,355.00	Post-secondary vocational training
519071	Jewelers and Precious Stone and Metal Workers	240	300	15	2.8	\$39,854.00	Long-term on-the-job training
519082	Medical Appliance Technicians	850	1,010	50	2.2	\$25,713.00	Moderate-term on-the-job training
519083	Ophthalmic Laboratory Technicians	830	910	25	1.2	\$35,933.00	Moderate-term on-the-job training
519122	Painters, Transportation Equipment	120	110	5	-1.1	\$34,557.00	Long-term on-the-job training
519194	Etchers and Engravers	1,850	1,620	60	-1.6	\$29,051.00	Moderate-term on-the-job training
519195	Molders, Shapers, and Casters, Except Metal and Pl						

SUPPLY DATA

CIP CODE(S)	CIP TITLE(S)	No of Certs	No of Assoc	No of Bach	No of Grads	No of SecCon
410301	Chemical Technology/Technician	4				
410303	Chemical Process Technology	216				
480501	Machine Tool Technology/Machinist	61	21			
480503	Machine Shop Technology/Assistant	140	238			
480507	Tool and Die Technology/Technician	16				
480510	Computer Numerically Controlled (CNC) Machinist Technology/CNC M	11	4			
480511	Metal Fabricator	19				
4805AH	Principles of Machining and Manufacturing					31
4805CH	Manufacturing Applications					25
4805IH						9
4805KH						17
Totals:		467	263			82

TOTAL SUPPLY: 812
TOTAL DEMAND: 3,435
SUPPLY/DEMAND RATIO: 24

Area
Tennessee
Statewide

Projection Time (Years) = 8
Average Occupational Growth Rate = 1.1

Base Year: 2014
Projected Year: 2022
Employment:

Cluster Code
13.2100000

Cluster Title
Prod., Design, Ops, and Maint. Pathway -- Prod.

Cluster Grade = A
The outlook for this cluster is Excellent.
The GROWTH rate is above the average for all occupations across the state.
There are more job openings expected annually than there were training completers in a recent year.

DEMAND DATA		Average					
SOC CODE(S)	SOC TITLES(S)	Estimated Employment	Projected Employment	Average Annual Openings	Annual Growth (%)	Annual Median Salary	Usual Education Requirements
131051	Cost Estimators	1,552	1,737	73	1.4	\$55,330.00	Bachelor's degree
517031	Model Makers, Wood	70	70	5	0.0	\$22,909.00	Moderate-term on-the-job training
517032	Patternmakers, Wood	90	100	5	1.3	\$22,362.00	Moderate-term on-the-job training
Totals:		1,712	1,907	78	1.4		

SUPPLY DATA

CIP CODE(S)	CIP TITLES(S)	No of Certs	No of Assoc	No of Bach	No of Grads	No of SecCon
There is no supply data available.						

Totals:

TOTAL SUPPLY:
TOTAL DEMAND:
SUPPLY/DEMAND RATIO:

0
78
.00

Area
Tennessee
Statewide
Cluster Code
13.2200000

Cluster Title
Prod. Design, Ops, and Maint. Path – Operations & Maint.

Projection Time (Years) = 8
Average Occupational Growth Rate = 1.1

Base Year:
Projected Year
Employment:
2014
2022

Cluster Grade = B
The outlook for this cluster is Very Good.
The growth rate is positive but not above the average for all occupations.
There are more job openings expected annually than there were
training completers in a recent year.

DEMAND DATA

SOC CODE(S)	SOC TITLE(S)	Estimated Employment	Projected Employment	Average Annual Openings	Average Annual Growth (%)	Annual Median Salary	Usual Education Requirements
131023	Purchasing Agents, exc. Wholesale, Retail & Farm.	4,040	4,350	110	0.9	\$51,086.00	Bachelor's degree
472011	Boilermakers	500	500	20	0.0	\$55,548.00	Long-term on-the-job training
491011	First-Line Supervisors of Mechanics, Installers, a	9,850	10,470	335	0.8	\$31,433.00	Work experience in a related occupation
499011	Mechanical Door Repairers	570	560	20	-0.2	\$30,058.00	Moderate-term on-the-job training
499031	Home Appliance Repairers	860	880	30	0.3	\$51,328.00	Long-term on-the-job training
499041	Industrial Machinery Mechanics	6,410	7,480	315	1.9	\$42,075.00	Long-term on-the-job training
499043	Maintenance Workers, Machinery	3,660	3,880	75	0.7	\$46,862.00	Long-term on-the-job training
499044	Millwrights	980	1,090	30	1.3	\$53,161.00	Moderate-term on-the-job training
499061	Camera and Photographic Equipment Repairers	20	20	0	0.0	\$40,094.00	Moderate-term on-the-job training
499062	Medical Equipment Repairers	1,200	1,530	75	3.1	\$31,507.00	Long-term on-the-job training
499063	Musical Instrument Repairers and Tuners	270	250	10	-1.0		Long-term on-the-job training
*****	*****	20	10		-8.3		Long-term on-the-job training
499071	Maintenance and Repair Workers, General	31,210	33,620	880	0.9	\$35,737.00	Post-secondary vocational training
499091	Coin, Vending, and Amusement Machine Servicers and	580	620	10	0.8	\$29,852.00	Moderate-term on-the-job training
499094	Locksmiths and Safe Repairers	500	640	35	3.1	\$31,404.00	Moderate-term on-the-job training
512022	Electrical and Electronic Equipment Assemblers	4,030	4,160	65	0.4	\$26,363.00	Short-term on-the-job training
512023	Electromechanical Equipment Assemblers	720	780	15	1.0	\$31,518.00	Short-term on-the-job training
516063	Textile Knitting and Weaving Machine Setters, Oper	500	550	15	1.2	\$25,101.00	Long-term on-the-job training
516064	Textile Winding, Twisting, and Drawing Out Machine	1,060	730	15	-4.6	\$25,900.00	Moderate-term on-the-job training
516091	Extruding and Forming Machine Setters, Operators,	480	390	10	-2.6	\$39,443.00	Moderate-term on-the-job training
518091	Chemical Plant and System Operators	1,350	1,140	50	-2.1	\$48,771.00	Long-term on-the-job training
519011	Chemical Equipment Operators and Tenders	2,410	2,220	80	-1.0	\$44,015.00	Moderate-term on-the-job training
519061	Inspectors, Testers, Sorters, Samplers, and Weighs	13,000	14,340	450	1.2	\$31,282.00	Moderate-term on-the-job training
Totals:		84,220	90,210	2,645	0.9		

SUPPLY DATA

CIP CODE(S)	CIP TITLE(S)	No of Certs	No of Assoc	No of Bach	No of Grads	No of SecCon
150401	Biomedical Technology/Technician.	9				
150403	Electromechanical Technology/Electromechanical Engineering T	50				1
1504AH						
150607	Plastics Engineering Technology/Technician.	10				
1506BH						32
470000	Mechanics and Repairers, General.		6			
470303	Industrial Mechanics and Maintenance Technology.	496	169			
470399	Heavy/Industrial Equipment Maintenance Technologies, Other.	12	22			
479999	Mechanic and Repair Technologies/Technicians, Other.	9				
520205	Operations Management and Supervision.	62			27	
Totals:		648	197		27	33

TOTAL SUPPLY:
TOTAL DEMAND:
SUPPLY/DEMAND RATIO:

905
2,645
34

Section 7: Table 2

Occupational Projections (Long-term) for Multiple Occupations in LWIA 4 in 2014-2022

Occupational Projections Table

The table below shows the long term projected annual openings for Multiple Occupations in LWIA 4 for the 2014-2022 projection period.

Occupation	Occupation Code	2014 Estimated Employment	Annual Avg. Openings Due to Growth	Annual Avg. Openings Due to Replacement	Total Annual Avg. Openings	Growth Description
Supervisors, Production Workers	511000	1,670	0	25	25	-1.10%
Supervisors of Installation, Maintenance, and Repair Workers	491000	650	0	15	20	0.20%
Plant and System Operators	518000	380	5	15	15	0.30%
Other Production	519000	5,390	20	125	150	1.20%
Other Installation, Maintenance, and Repair	499000	4,550	70	100	165	1.30%
Metal Workers and Plastic Workers	514000	3,770	55	70	125	3.50%
Electrical and Electronic Equipment Mechanics, Installers, and Repairers	492000	540	20	10	30	3.50%
Assemblers and Fabricators	512000	7,270	135	115	255	1.50%

Source: Tennessee Department of Labor and Workforce Development. (2016). *Occupational Projections (Long term) for Multiple Occupations in LWIA 4 in 2014-2022*.

Retrieved from <https://www.jobs4tn.gov/vosnet/analyzer/results.aspx?session=occproj>

Section 7: Table 3

Advanced Manufacturing Occupation Projections by LWIA

PROJECTIONS				
Job Titles	2014 Projections	2022 Projections	2014 – 2022 Change	Annual Average % Change
Manufacturing Production Technicians				
LWIA 4	70	80	10	1.4%
LWIA 3	30	30	0	1.6%
Industrial Engineering Technicians				
LWIA 4	90	90	0	.3%
LWIA 3	70	90	20	3.3%
Maintenance Workers				
LWIA 4	420	480	50	1.5%
LWIA 3	100	110	10	1.5%
Industrial Machinery Workers				
LWIA 4	550	610	60	1.2%
LWIA 3	270	390	120	4.6%
Electrical & Electronic Repairers				
LWIA 4	40	40	0	0
LWIA 3	170	180	0	.4%
Electro-Mechanical Technicians				
LWIA 4	20	20	0	.7%
LWIA 3	30	40	10	2.9%
Electronics Engineers				
LWIA 4	90	110	20	2.1%
LWIA 3	130	150	20	1.6%
Electrical Engineering Technicians				
LWIA 4	70	80	10	1.4%
LWIA 3	30	30	0	1.6%
First-Line Supervisors of Mechanics				
LWIA 4	650	670	10	.2%
LWIA 3	750	860	120	1.9%
Robotics Technicians				
LWIA 4 *No data available*	N/A	N/A	N/A	N/A
LWIA 3 *No data available*	N/A	N/A	N/A	N/A
Machine Feeders & Offbearers				
LWIA 4	280	240	-40	-2.2%
LWIA 3	10	10	0	1.3%
Electronics Engineering Technologists				
LWIA 4 *No data available*	N/A	N/A	N/A	N/A
LWIA 3 *No data available*	N/A	N/A	N/A	N/A

Section 7: Table 3 continued

PROJECTIONS				
Job Titles	2014 Projections	2022 Projections	2014 – 2022 Change	Annual Average % Change
Mechanical Engineering Technicians				
LWIA 4	140	160	20	1.5%
LWIA 3	30	40	10	1.8%
Computer-Controlled Machine Operators				
LWIA 4	80	110	30	4.5%
LWIA 3	60	70	10	3.6%
Manufacturing Engineering Technologist				
LWIA 4	70	80	10	1.4%
LWIA 3	30	30	0	1.6%
Electrical Engineering Technologists				
LWIA 4	70	80	10	1.4%
LWIA 3	30	30	0	1.6%
Electromechanical Equipment Assemblers				
LWIA 4	10	20	10	3.9%
LWIA 3	160	130	-30	-2.9%
Machine Setters, Operators, Tenders				
LWIA 4	190	170	-20	-1.4%
LWIA 3	130	180	50	4.3%
Molding, Metal, Casting Machine Setters				
LWIA 4	180	170	-10	-.6%
LWIA 3	40	70	30	8.3%
Molding & Casting Workers				
LWIA 4 *No data available*	N/A	N/A	N/A	N/A
LWIA 3 *No data available*	N/A	N/A	N/A	N/A
Model Makers, Metal & Plastic				
LWIA 4	10	10	0	-3.1%
LWIA 3	0	10	10	9.1%
Forging Machine Setters & Operators				
LWIA 4	90	80	-10	-1.5%
LWIA 3	10	10	0	0%
Multiple Machine Tool Setters				
LWIA 4	120	100	-20	-1.5%
LWIA 3	150	190	40	3%

Source: Tennessee Department of Labor and Workforce Development. (2016). *Occupations in Demand, Projected Jobs Data*. Retrieved from <https://www.tn.gov/workforce/topic/occupations-in-demand>.

Also see Letters of Collaboration and Support for employer driven job demand estimates. These are at the end of this document following Section 8 Budget.

Section 7 continued

Table 4 - Supportive Articles

ANDERSON COUNTY (ADJACENT TO LOUDON AND CAMPBELL)

Oak Ridge Manufacturer Expected to Create 200 New Jobs

<http://wate.com/2016/02/02/oak-ridge-manufacturer-expected-to-add-100s-of-new-jobs/>

New Manufacturing Company to Open in Clinton

<http://www.local8now.com/home/headlines/New-manufacturing-company-to-open-in-Clinton-284906481.html>

Dura-Line to Open New Plant, R&D Center in Clinton

<http://www.oakridger.com/article/20151027/NEWS/151029913>

SL Tennessee, LLC to Create 1,000 New Jobs in Clinton

<http://businessfacilities.com/2014/07/sl-tennessee-llc-to-create-1000-new-jobs-in-clinton-tn/>

Eagle Bend Manufacturing Plans \$54.9 Million Expansion in Clinton, TN

<http://www.areadevelopment.com/newsItems/10-1-2015/eagle-bend-manufacturing-clinton-tennessee563489.shtml>

BLOUNT COUNTY (ADJACENT TO LOUDON)

DENSO Expanding in Blount County, Creating 500 New Jobs

<http://wate.com/2015/08/25/haslam-to-announce-significant-investment-in-blount-county/>

ALCOA Hiring Workers for Auto Sheet Mill

http://www.thedailytimes.com/news/alcoa-hiring-workers-for-auto-sheet-mill/article_e3a44fd7-14a5-5938-ae26-128ab5668114.html

Ammunition Company to Build Headquarters, Manufacturing Facility in Alcoa (creating 605 new jobs)

http://www.thedailytimes.com/news/ammunition-company-to-build-headquarters-manufacturing-facility-in-alcoa/article_b84f9938-2e07-5eef-9740-0ead55780210.html

CAMPBELL COUNTY (TARGET COUNTY) & CLAIBORNE COUNTY (ADJACENT TO CAMPBELL)

Claiborne, Campbell Counties Seek Federal Funds to Offset Loss of Coal Jobs

<http://www.knoxnews.com/news/state/claiborne-campbell-counties-seek-federal-funds-to-offset-loss-of-coal-jobs-2ffc1f45-6f8e-5a58-e053-0-375096581.html>

Section 7: Table 4 - continued

DTR Tennessee, Inc. to Expand Tazewell Manufacturing Facility

<https://www.tn.gov/news/38747>

Furniture Maker England Inc. Announces Tennessee Expansion

<http://www.timesfreepress.com/news/local/story/2013/oct/25/furniture-maker-england-inc-announces-tennessee-ex/122341/>

CUMBERLAND COUNTY (TARGET COUNTY)

CoLinX Continues Growth with 150 New Jobs

http://www.crossville-chronicle.com/news/local_news/colinx-continues-growth-with-new-jobs/article_2008093e-b972-11e5-bbb2-bf349e468f2b.html

Expansion is “Best Economic Sense” for CCM

<http://www.cpbj.com/article/20140124/CPBJ01/301239996/expansion-is-best-economic-sense-for-ccm>

Salute to Industry: Growing & Growing (StonePeak Ceramics 2012)

http://www.crossville-chronicle.com/news/lifestyles/salute-to-industry-growing-and-growing/article_de8cb52d-62f2-5d6d-a655-3119b2850f4f.html

KNOX COUNTY (ADJACENT TO LOUDON)

General Motors to Expand Middle TN Manufacturing Plant

<http://www.local8now.com/content/news/General-Motors-to-expand-Middle-Tennessee-manufacturing-plant-377269501.html>

Plastics Manufacturer Adding 200 Jobs in Knox County

<http://www.local8now.com/home/headlines/Plastics-manufacturer-adding-200-jobs-in-Knox-County-298243691.html>

Lifetime Products Invests \$115 Million in East Coast Expansion

<http://www.plasticsnews.com/article/20151120/NEWS/151129957/lifetime-products-invests-115-million-in-east-coast-expansion>

Medical Manufacturer Opening New Plant in TN

<http://www.industryweek.com/expansion-management/medical-manufacturer-opening-new-plant-tennessee>

Knoxville Automotive Plant Expanding, Creating 202 Jobs

<http://www.knoxnews.com/news/local/knoxville-automotive-plant-expanding-creating-202-jobs-ep-1017121156-362369641.html>

Section 7: Table 4 – continued

LOUDON COUNTY (TARGET COUNTY)

Del Conca USA to Double Production at Loudon County Facility

<http://www.knoxvilleoakridge.com/news/del-conca-usa-to-double-production-at-loudon-county-facility/53/>

Morgan Olson Opens New Manufacturing Facility in Loudon County

<http://wate.com/2015/10/22/auto-manufacturer-opening-production-warehouse-in-loudon-county/>

MEIGS COUNTY (ADJACENT TO LOUDON)

DENSO Expanding McMinn County Facility, Adding 400 jobs (next to Meigs County)

<http://wate.com/2015/01/28/denso-expanding-mcminn-county-facility-adding-400-jobs/>

Athens Looks at CAMBI Funding (*services 5 counties including Meigs County*)

http://www.dailypostathenian.com/news/article_4dcfe624-b2c8-5b84-98a1-44a1b2636396.html

MONROE COUNTY (ADJACENT TO LOUDON)

JTEKT Announces \$218.5 Million Vonore Expansion

<http://www.knoxnews.com/business/jtekt-to-do-2185-million-expansion-2abb233d-3c37-44a9-e053-0100007f712a-367262431.html>

Yamaha Creating 150 Jobs in East TN

<http://www.timesfreepress.com/news/local/story/2014/dec/15/yamaha-creating-150-jobs-east-tennessee/278206/>

Carlex to Expand, Add 50 Jobs

<http://www.knoxnews.com/business/carlex-to-expand-add-50-jobs-ep-1031415572-362337241.html>

PUTNAM COUNTY (ADJACENT TO CUMBERLAND)

Spain-Based Ficos North America Invests \$58 Million in Cookeville, TN, Manufacturing Center

<http://www.areadevelopment.com/newsItems/5-26-2015/ficosa-north-america-cookeville-tennessee756545.shtml>

TTI Floor Care North America to Expand Cookeville, TN Operations

<http://businessfacilities.com/2014/08/tti-floor-care-north-america-to-expand-cookeville-tn-operations/>

Greenbrier Manufacturer Expansion to Bring 178 Jobs

<http://www.tennessean.com/story/news/local/robertson/2015/05/08/greenbrier-manufacturer-expansion-bring-jobs/26974113/>

Section 7: Table 4 – continued

ROANE COUNTY (ADJACENT TO LOUDON AND CUMBERLAND)

Rockwood's TohoTenax Plant Expanding, Adding Jobs

<http://www.knoxnews.com/business/rockwoods-toho-tenax-plant-expanding-adding-jobs-2a569052-9d43-4065-e053-0100007f3a86-366758761.html>

RHEA COUNTY (ADJACENT TO CUMBERLAND)

Goodman Manufacturing Plans to Add 200 Jobs in Dayton, Tenn.

<http://www.timesfreepress.com/news/local/story/2013/may/01/goodman-adds-200-jobs-in-dayton-tenn/106807/>

Also see Letters of Collaboration and Support for employer driven job demand estimates. These are at the end of this document following Section 8 Budget.

**Letters of Collaboration and Support with
Businesses and Chambers/Economic
Development Organizations**



1536 Genesis Road Ph: (931) 459-5100
Crossville, TN 38555 USA Fx: (931) 459-5301

July 15, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

To Whom It May Concern:

CoLinX, LLC is excited about partnering with ETHRA, Roane State, the TN Colleges of Applied Technology, the Cumberland County school system and their career technical education programs.

CoLinX has been a part of the community for over 20 years under various names. We currently employ over 1,000 people from Cumberland and the surrounding communities. Our business, a not for profit, is a distribution center for various industrial bearings and belts.

CoLinX is looking for team members that have the ability to or are motivated to learn the following:

Soft skills needed

- Decision making in a fast pace environment
- Communicate well with others, both written and verbal
- Self motivated
- Have good time management skills
- Can help problem solve (creatively)
- Work well in a team atmosphere

Technical skills needed

- Ability to work with computers, scanners and keyboards
- Ability to drive material handling equipment
- Ability to assemble product either on an assembly line or picking into a box
- Work independently
- Critical thinking
- Team building

We have added over 400 jobs this year and expect to grow at a smaller pace in future years. We will need Distribution Specialists who receive, pick, pack and ship our products along with maintenance staff to take care of our automated storage and retrieval systems. There are also

opportunities for clerical and management positions within CoLinX. Our current turnover is around 20% and that hasn't changed over the past several years.

CoLinX is interested in providing on-the-job training experiences for new adult and/or dislocated worker employees eligible through the local Workforce Investment Opportunity Act and Tennessee Career Centers. We estimate we could make approximately 100 or more people of opportunities available over the life of the grant. As our business ebbs and flows, an exact estimate is hard to reach.

The state's support of this grant application and investment of funding into the region will be worthwhile. It will result in a better trained workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students and others and, ultimately, drive the economy. Please customize this paragraph or write your own. We currently work with high schools in this and the surrounding areas who are eager to learn our processes.

Regards,



Gina Bilyeu
Senior Human Resource Manager



mizkanTM
Bringing Flavor to LifeTM

July 12, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

To Whom It May Concern:

Mizkan is excited about partnering with ETHRA, Roane State, the TN Colleges of Applied Technology, the Cumberland County school system and their career technical education programs.

Mizkan America has been in Crossville since 1991. We bottle and produce Vinegar and Mustard. Fully staffed, we have eighty-four employees and run two shifts Monday through Saturday. Our company is growing, we just acquired Ragu and Bertolli Sauces last year although we will not produce those products at the Crossville facility, we will start seeing it in our Warehouses for co-shipping.

Mizkan America is looking for individuals with both mechanical and electrical skills. Mizkan is looking for someone who can read and draw schematics. We are looking for individuals who have hands on mechanical experience as well, specifically troubleshooting manufacturing lines.

Over the next two years, Mizkan in Crossville will be adding a full time Engineer to our headcount. With that position, we will also add four more maintenance technicians to our headcount to assist the engineer in projects.

Mizkan America in Crossville is interested in providing on-the-job training experiences for new adult and/or dislocated worker employees eligible through the local Workforce Investment Opportunity Act and Tennessee Career Centers. We estimate we could make approximately 5 opportunities available over the life of the grant.

The state's support of this grant application and investment of funding into the region will be worthwhile. It will result in a better trained workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students and others and, ultimately, drive the economy.

Thank you,

Jessica L. Ruiz
Office Manager

Mizkan America

1661 Feehanville Drive ■ Suite 300 ■ Mount Prospect, Illinois 60056 ■ Phone: 847/590-0059 ■ Fax: 847/590-0405



SL Tennessee, LLC

312 Frank Diggs Dr. Clinton, TN 37716 TEL +865.457.8511 FAX +865.457.0475
www.sl-america.com

July 8, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

To Whom It May Concern:

SL Tennessee continues to support Roane State and their partnership with ETHRA, the TN Colleges of Applied Technology and local school systems for the continued growth of their career technical education programs.

SL Tennessee is a division of SL America. SL America is a leading global automotive supplier with manufacturing operations and product development in 7 countries. Our corporation has well over 12,000 employees with the Clinton facility at a current staff of over 1200. This facility plans to grow their workforce to over 2000 employees by 2020 with the increased market of new product lines and opportunities in the automotive sector.

We continue to work diligently to draw the best and brightest talent to our company. SL Tennessee works with the local schools systems to support dual enrollment initiatives as well as co-op/internship opportunities from various higher educational facilities including Roane State. We are in constant contact with the Roane State Mechatronics program staff to recruit their mechatronics graduates before any other company in the area hire them. We have found the various skills these individuals learn fits well into both our lighting and chassis divisions and help shave critical time off of these employees' training time.

SL Tennessee's future workforce needs for technicians in the Advanced Manufacturing field will expand over the next five years. We expect to expand our workforce as follows:

- 250 incremental technician jobs over the next 2 years



SL Tennessee, LLC

312 Frank Diggs Dr. Clinton, TN 37716 TEL +865.457.8511 FAX +865.457.0475
www.sl-america.com

- 400 incremental technician jobs in years 3 to 5

We are cognizant of the need to have a prepared workforce to fill the positions left empty as we have turnover and our aging workforce retires. SL Tennessee expects this to be approximately 50 jobs per year.

SL Tennessee is always willing to work with various partners to support the development of a trained workforce. We will continue to work with local school systems and Roane State in their efforts to develop and foster Work-Based Learning Opportunities to approximately 10 high school students over the life of the grant. These opportunities would start out as entry-level technicians with skills increasing as the individual advances their product knowledge. SL Tennessee also works with the local Workforce Investment Opportunities Act program to take advantage of potential on-the-job training experiences for new adult and/or dislocated worker employees and Incumbent Worker Training opportunities when needed.

SL Tennessee feels that the state's support of this grant application and investment of funding into the region will be worthwhile. As proven by the success of the first LEAP award, employers in the area gain a better trained workforce while also supporting the state's DRIVE to 55 Initiative, providing career pathway opportunities for high school students and maintaining the sustainability of our growing company.

Regards,

A handwritten signature in dark ink, appearing to read 'SL', is written over the word 'Regards,'.

Scott Laska

Director of Business Development



July 13, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 - 0830

Attention: Curt Johnson

To Whom It May Concern:

Proton Power, Inc (PPI) is excited about partnering with ETHRA, Roane State, the TN Colleges of Applied Technology of Harriman, local school systems and their career technical education programs.

Since 2008, Proton Power has made Roane County home for the research and development of our renewable energy technology. In that time, PPI has grown to over 130 employees. As we expect that growth to continue, we need to educate today's youth on the workforce opportunities that exist in the area.

Most importantly, we need employees that have strong soft skills. Young people that are dependable to show up on time, pass a drug test and willing to listen to their management. Additional skills that we are constantly searching for include, welders, panel builders and programmers.

Proton Power commits to working with the local partners to provide Work-Based Learning Opportunities to numerous high school students over the life of the grant including learning experiences such as hands-on internships in production, engineering, design, admin and maintenance.

PPI is also very interested in providing on-the-job training experiences for new adult and/or dislocated worker employees eligible through the local Workforce Investment Opportunity Act and Tennessee Career Center's. We will make several opportunities available over the life of the grant.

We stand willing to assist any program that will result in a better-trained workforce for our area. Knowing that lower unemployment rates ultimately drive the economy and support the governor's DRIVE to 55 initiative.

Regards,

A handwritten signature in blue ink, appearing to read "Sean D. Hensley", is written over a horizontal line.

Sean D. Hensley
Purchasing and Human Resources Manager

July 14, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

To Whom It May Concern:

Tate & Lyle Ingredients Americas, LLC is excited about partnering with ETHRA, Roane State, the TN Colleges of Applied Technology, local school systems, and their career technical education programs. We have had very good results with the recruiting of applicants from Chattanooga State Technical Community College. They have developed a process engineering two year degree program that incorporates basic manufacturing, computer, and laboratory skills that are necessary to be successful in our increasingly modernized plant.

Since our start in 1982, both our market and company value has seen a steady growth. We continue to satisfy our current customers and add new customers almost daily with a variety of new products. We produce a wide variety of products at our Loudon Plant. We produce high fructose corn syrup, corn meal, corn germ, corn gluten pellets, ethanol, fructose, maltodextrin, and produce several products through our joint venture with Dupont. New products are being developed and tested as well.

Our frontline staff members are called process technicians. The job description/skills/requirements are as follows:

Description/Job Summary

The position will may require bending, lifting, pushing, pulling, sitting, and standing for 12 hour shift durations. This hands-on hourly position is responsible for the operation of chemical process equipment and motorized industrial equipment. Candidate will operate complex chemical processes utilizing a wide range of process equipment and controls both in the field and in the area control rooms to produce current and future Tate & Lyle products.

Required Skills

- Safety minded attitude
- Commitment to Safety & Quality
- Reliable & Punctual
- Communication skills and computer proficiency with MS Office products
- Duties include monitoring and controlling chemical processes, cleaning and maintaining equipment, process and product testing, packaging and recordkeeping.
- Ability to interface and problem solve in a team environment consisting of various skill types is essential.

Experience in the following will be considered a plus:

- Familiarity with Rockwell and PI data software products
- Setup and troubleshooting field instruments such as flow, level, pressure, pH
- Knowledge of pumps, compressors, distillation systems, reactors, centrifuge, filtration and evaporation systems a plus.
- Certification in SCBA, emergency response and Hazmat a plus.

Required Education

- High school education or equivalent
- Two years chemical/food additive industry experience or Associates degree (chemical process technology) and related industry experience desired.

In conclusion, the state's support of this grant application and investment of funding into the region will be worthwhile. It will result in a better trained workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students and others and, ultimately, drive the economy.

Regards,



Gerald Schlueter
Plant Manager

SMALLBIZ RESOURCE, LLC

60 Ridley Street; Suite 126 • Crossville, TN 38555
931-787-1727 • 931-787-1728 (Fax)

July 12, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243-0830

Attention: Curt Johnson

To Whom It May Concern:

Smallbiz Staffing is excited about partnering with ETHRA, Roane State, the TN Colleges of Applied Technology, the Cumberland County school system and their career technical education programs.

Smallbiz Staffing is an employment agency dedicated to serving. Our mission is to better the lives of the great people in our community by providing them with great jobs that meet their skills and abilities. We have been serving Crossville for eight years and continue to grow our clientele by developing positive relationships with our employers and employees.

We seek motivated workers. Our clients want employees they can depend on to listen and follow rules and procedures. Some positions we provide deal with driving forklifts and moving heavy inventory, but many of our jobs involve operating on equipment and machinery. This means it is vital for us to employ these dependable workers, and whether or not they have the technical training/education preferred is a big factor in being able to place that employee.

Our goal is to employ everyone who walks through our door; we alone have placed over 180 employees since January 1 of this year. From clerical and administrative work to assembly line and packaging jobs, we employ a wide variety of people with a plethora of skills to not only keep our business running but our clients' business as well. Our clients seek experience in their workplace, and that experience comes from the hands-on training that many of our employees receive through training from our education system.

SmallBiz Staffing is excited for the possibility of providing on-the-job training experiences for new adult and/or dislocated workers eligible through the local Workforce Investment Opportunity Act and Tennessee Career Centers. The possibilities are immeasurable for the amount of employees we could provide over the life of the grant.

The state's support for this grant will help our community by creating more career possibilities for high school students and others. This will lead to a better equipped workforce that is ready to tackle real life obstacles and ultimately better our community.

Regards,



Logan Parsons
Marketing Assistant



Transforming special occasions
into **EPIC EVENTS**

Post Office Box 1776
115 North 1st Street
LaFollette, TN 37766
Phone: (800) 662-1331
www.pyroshows.com

Pyro Shows
115 N. First Street
LaFollette TN 37766

July 20th, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

To Whom It May Concern:

Pyro Shows is excited about partnering with ETHRA, Roane State, the TN Colleges of Applied Technology and local school systems and their career technical education programs. We have worked with them in the past and are currently working on a program to use their students in and around our fireworks business.

Pyro Shows has been in business since 1969 and is in the business of providing fireworks shows to local communities and businesses. We have offices in Tennessee, Texas and Alabama and shoot fireworks shows all over the Southeastern United States. We currently employ around 35 people year round between all our offices, but our work force increases to over 400 during the busy 4th of July season. We are constantly looking for young men and women who would like to learn the art of fireworks.

Our employee's skills include general carpentry, electric, and math skills that are taught in the classroom and used in the field as well. We have been working with the local staff to incorporate some of this training in the classroom and work with them on an internship where these students spend time with our technicians during our busy season to gain credit toward their degree.

Pyro Shows could use students to help fill the needs of new and upcoming Pyro Technicians who could then be a part of our team to earn money as either a part time pyro tech or eventually full time staff for Pyro Shows. Most of our employees started their tenure with the company as young technicians working part time and summers before becoming full time employees.

ABC Sports
Monday Night Football
Silver Jubilee Celebration
Abu Dhabi, UAE
Fourth of July Washington
Monument
Washington, D.C.
University of Tennessee
Football/Basketball
Boomsday Festival
Knoxville, TN
Harborfest
Norfolk, VA
SunFest
West Palm Beach, FL
New Year's Eve
San Diego, CA
Rivercade Days
Sioux City, IA
Texas Motor Speedway
Fort Worth, TX
Dollywood
Pigeon Forge, TN
Riverbend Festival
Chattanooga, TN
Tennessee Titans Football
Nashville, TN
Silver Dollar City
Branson, MO
Lighted Boat Parade
Jacksonville, FL
Fourth of July
Fort Bragg, NC
Bristol Motor Speedway
Bristol, TN
Millennium Celebration
Fort Wayne, IN
International Fireworks
Competition
San Sebastian, Spain
Stone Mountain Laser Show
Stone Mountain, GA



Pyro Shows could train several people during a season and continue working with these trainees for the next couple years until they became proficient and received their State of Tennessee Display operator's license which would allow them to become fully license and trained pyro technicians. We would be able to work these technicians on an "as needed" basis for future show and events.

Job duties for pyro technicians include loading, handling, and transporting explosives with a Commercial Driver's License with a Hazardous Materials endorsement. Upon arriving at the pre-determined site our techs would begin building and constructing the racks used to shoot fireworks. After the racks are set up fusing and wiring skills are used to load and prepare the show to be shot electronically. During the day our technicians also communicate with the customer, sponsor, local police and fire authorities to discuss the details about the show. After the show, cool down and clean up begins and the site is left as it was when we arrived. Any un-exploded ordinance is loaded up and returned to our storage magazines.

Pyro Shows would be interested in assisting students with any duties that would be appropriate for such an internship. We would also be interested in providing on-the-job training experiences for new adult and/or dislocated worker employees eligible through the local Workforce Investment Opportunity Act and Tennessee Career Center's. Potential employees would be required to pass the necessary testing required by Pyro Sows before being allowed to work with and around explosives.

The state's support of this grant application and investment of funding into the region will be worthwhile. It will result in a better trained workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students and others and, ultimately, drive the economy. Anytime we can work with local people within out county it's a win, win for everyone.

Sincerely,



Jimmy Huddleston

Pyro Shows



Aisin Automotive Casting Tennessee, Inc.

221 Frank L. Diggs Dr., Clinton, TN 37716
TEL: (865)457-4581 FAX: (865)457-4582

July 20, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

To Whom It May Concern:

AISIN Automotive Casting Tennessee, Inc. is excited about partnering with ETHRA, Roane State, the TN Colleges of Applied Technology and local school systems and their career technical education programs.

AISIN Automotive Casting Tennessee, Inc. was established in January 2004 to produce aluminum engine components including oil and water pumps, VVTs, and pistons. This past year we have started production lines to support the next model V6 engine for Toyota and look to increase our skill set with training and a higher level workforce in new hires. We are also preparing for the next 4 Cylinder components along with new products and technology with resin injection molding that should allow more opportunities to grow. AISIN Automotive Casting Tennessee recently celebrated 10 years of production in Clinton, TN and AISIN celebrated its 50th anniversary. We have also established the Onsite Aisin Health and Wellness Center to support the needs of AACT team members and their families.

Please note that it is important to Aisin that you see that every course in the program focuses on industrial safety (such as lock-out-tag-out procedures), which in turn will allow us to focus our internal training on aspects that are specific to our production facility. Secondly, the program is likely to increase the skill of our workforce by incorporating training aspects that we regard as critical (such as the ability to program and modify PLCs and to program CNC machines). Finally, we think the program provides an excellent pathway into Advanced Manufacturing for recent high school graduates. It fills a critical gap for those students in our area who are seeking a career in industry and who are not ready to earn a traditional degree.

AISIN is really excited in the state's support of this grant application and investment of funding into the region will be worthwhile. It will result in a better trained workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students and others and, ultimately, drive the economy.

Regards,

Dan Sherwood
Human Resources Specialist

July 20, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

To Whom It May Concern:


Crossville, Inc. looks forward to partnering with ETHRA, Roane State, and the Cumberland County school system and their career technical education programs on the LEAP 2.0 grant. Crossville, Inc. (Crossville) is the first tile manufacturer in Tennessee (est. 1986). Crossville is the leading American manufacturer of beautiful, sustainable solutions that advance the frontiers of tile design. From introducing the nation's first large-format porcelain tiles, to becoming the first and only net consumer of tile waste materials (meaning we recycle even more than we produce), to developing cutting-edge performance innovations that turn mere surfaces into "breathing" living environments—we are committed to pioneering products and practices that change the way the world views tile.

Crossville has grown to 445 employees and continues to grow over time as we develop additional product lines. Our production processes are automated and many of them operate with robotics and PLCs as well as other systems using the skills learned in the Mechatronics program. We look forward to having future hires with these technical and soft skills sets.

Crossville is potentially interested in providing on-the-job training experiences for new employees eligible through the local Workforce Investment Opportunity Act and Tennessee Career Center. The number of opportunities available for skilled maintenance positions continues to rise as we prepare for succession planning, maintain existing equipment, upgrade new equipment, and grow our operations.

The state's support of this grant application and investment of funding into the region will be worthwhile. It will result in a better trained workforce, support the DRIVE to 55 initiatives, provide career pathway opportunities for high school students and others and, ultimately, drive the economy.

Regards,



Jennifer Parsons
Organizational Development



May 14, 2016

Roane State Community College
Attn: Ms. Kim Harris
276 Patton Lane
Harriman, TN 37748

RE: LEAP GRANT PROGRAM

Dear Ms. Harris:

Please allow this letter to serve as a follow up to our conversation regarding Del Conca USA's, Inc. support of Roane State's proposed LEAP Grant application.

Del Conca USA, Inc. believes the proposed developmental program would be especially beneficial to the local Loudon County community. Not only would local residents benefit, but manufacturing employers, such as Del Conca, would find the program to be particularly helpful. We believe it would be an asset to the Loudon County area to help develop the future workforce. We see the program as great tool to "build the bridge" between the community, education, and industry.

Should you require any additional information please do not hesitate to contact me at 865.657.3551.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Boyles', followed by a long horizontal line.

Paul Boyles, SPHR, SCP-SHRM



July 18, 2016

Mr. Curt Johnson
Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

RE: Roane State Community College LEAP Grant Application

To Whom It May Concern:

The Loudon County Economic Development Agency is an independent governmental entity established by an intergovernmental agreement between the County of Loudon and the Cities of Loudon and Lenoir City. In addition to industrial and commercial recruitment and development, downtown revitalization, and transportation, one of the roles the Agency plays is as liaison between the local governmental entities and our local industries. Interaction and feedback from those industries has indicated a strong desire to work closely with our local school systems, Roane State Community College, TN Colleges of Applied Technology and ETHRA in developing a stronger, more technologically diverse workforce, particularly in the area of advanced manufacturing.

The proposed mechatronics dual enrollment opportunity for high school students will help ensure a trained local workforce is readily accessible. Noted desired qualities include strong soft skills, familiarity with the types of equipment used in advanced manufacturing, mathematical basics, and ability to troubleshoot, analyze and offer problem resolution. An Advanced Manufacturing Partnership provides an opportunity for students to begin a learning process that segues immediately into a degreed program with the local educational institutions. This will expedite their success and prove to be a valued asset to our industries.

The state's support of this grant application and investment of funding into the region will be worthwhile. It will result in a better trained workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students and others and, ultimately, drive the economy.

Sincerely,

A handwritten signature in blue ink that reads "Stephanie Myers".

Stephanie Myers, Assistant Director



CAMPBELL COUNTY, TENNESSEE MAYOR

E.L. Morton

OFFICE: 423-562-2526

FAX: 423-562-2075

570 Main Street, P.O. Box 435

JACKSBORO, TENNESSEE 37757

countymayor@campbellcountygov.com

July 20, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

Mr. Johnson,

Campbell County is excited about partnering with ETHRA, Roane State, the TN Colleges of Applied Technology our County school system and their career technical education programs.

The economy is rapidly returning to our region and advanced manufacturing employees are at a premium. The potential for our students and workers to capitalize on the LEAP Grant has never been more real. From soft skills, to written communications, to software and to flow management, advanced manufacturing skills are in high demand in our County and region.

Our County currently has a 40 job Advanced Manufacturing announcement on August 2, 2016 at Telos Corporation with 160 more jobs projected in the next year. Telos specializes in automotive manufacturing. Processes include heat press metal works, 3D Carbon, metal and ceramic printing, tool and dye, machining and milling via CNC programming and other automated systems. These systems require software language, diagnostics, quality assurance, maintenance and hardware upgrades per individual contract specifications.

Local workforce developers have agreements with multiple employers for internships, job placement and curriculum development for thorough Work-Based Learning Opportunities for up to 300 graduates over the life of the grant. This includes high school graduates and local eligible displaced workers. Our County Career Center is prepared to support these efforts, along with the Tennessee College of Applied Technology- Jacksboro and Roane State Community College, Campbell County.

I am happy to report recent progress and impending job announcements. The state's support of this application however, represents tremendous support to a highly distressed Campbell County economy. It will result in a better trained workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students and others and, ultimately, drive the economy.

Sincerely,

E.L. Morton
County Mayor



1016 Main Street | P.O. Box 305 | Jacksboro, TN 37757
Tel 423.566.0329 | Fax 423.566.3306
www.campbellcountychamber.com

July 15, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

To Whom It May Concern:

Campbell County Chamber of Commerce is excited about the partnership between ETHRA, Roane State, the TN Colleges of Applied Technology (TCAT) and local school systems and their career technical education programs. This partnership will provide for the expansion of RSCC Mechatronics training to our high school students as well as provide equipment to support related TN College of Applied Technology training and future training at the high schools, TCAT and Roane State. Current and future students in these programs are excited about increasing their technical skill set, and grant funding to boost the needs of this program would be an asset.

We continue to work to support the expansion of jobs in our county through the growth of current business and the recruitment of new business. This is particularly important in the advanced manufacturing industry where Mechatronics training will help provide the skills required by employers.

We are particularly excited about the provision of Work-Based Learning and On-the-Job Training opportunities to students/graduates of the training to better prepare these individuals for full time, self-sufficient employment.

Our Chamber encourages the state to support this grant application and investment of funding into the region. It will result in a better trained workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students and others and, ultimately, drive the economy.

Regards,

Christie Elkins
Executive Director, Campbell County Chamber of Commerce

~In Business For Business~





34 South Main Street
Crossville, TN 38555
1-877-GOLF-TN-1 (466-3861)
Local: 931-484-8444
Fax: 931-484-7511

July 13, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243-0830

Attention: Curt Johnson

To Whom It May Concern:

The Crossville-Cumberland County Chamber of Commerce is delighted to be able to offer this communication in support of Roane State Community College, TCAT Crossville and the Cumberland County Schools to apply for LEAP grant to bring Mechatronics training to Cumberland County.

Over the course of the last year and a half, our community has embarked on an effort to bring collaboration to local governments, the Chamber and the educational institutions applying for this grant. While final approval is pending from all parties, a formal "Cooperative Agreement" is being circulated to invite participation from the following entities: Roane State Community College, TCAT, the Cumberland County School system, Cumberland County government, City of Crossville, the Town of Pleasant Hill, the City of Crab Orchard, the Joint Economic Community Development Board, the IDB and Chamber. This agreement states all parties desire to work together to create an improved system for growing the local economy by addressing the needs of tomorrow's workforce-this application fits quite nicely within the spirit of cooperation envisioned by the parties.

While "working together" is our objective, the community embarked on a citizen based consensus project that took about 18 months to reach out and involve all Cumberland County residents-adults as well as children (representative samples of 8th, 10th and 11th graders) to seek their input and views on a brighter future. This process was called, *The Horizon Initiative*. Outcomes of this process have included: new jobs being created, the establishment of Cumberland County Rising-an anti-drug coalition, the formation of a Workforce Development Council (14 human resource specialists) within the Chamber of Commerce and success at achieving: first-round selection in the State of Tennessee Property Evaluation Program and a new Tennessee Downtown designation. In the year ahead, the Chamber will coordinate the hiring of consulting help to create a target industry program and comprehensive workforce development strategy.



Long story short, collaborations and partnerships are being formed that address those issues relevant to an involved citizenry and this LEAP grant would go a long way to sustaining the momentum that we have in Cumberland County. We hope you will look favorably upon this application and know that we stand ready to assist in any manner necessary.

Sincere,

A handwritten signature in black ink, appearing to read "J. Bradley Allamong", written over the printed name.

J. Bradley Allamong
President/CEO

Crossville-Cumberland County Chamber of Commerce

**Memorandums of Understanding
and Letters from Local Education Agencies
and Tennessee Colleges of Applied Technology**

MIKE ORICK, CHAIRMAN
P.O. Box 106
Caryville, TN 37714

CLINT BANE CO-CHAIR
263 Preston Circle
Jacksboro, TN 37757

WALLACE GOINS
192 Bethel Lane
LaFollette, TN 37766

DANNY WILSON
938 Glade Springs Road
LaFollette, TN 37766

SHARON RIDENOUR
386 Middlesboro Road
LaFollette, TN 37766

CAMPBELL COUNTY

Board of Education

172 Valley Street
Jacksboro, Tennessee 37757
Phone: 423-562-8377 • Fax: 423-566-7562

Larry Nidiffer
Director of Schools

HOMER RUTHERFORD
132 Wood Haven Lane
LaFollette, TN 37766

JOHNNY BYRGE
1005 Rose Hill Drive
LaFollette, TN 37766

FAYE HEATHERLY
148 Colonial Heights
LaFollette, TN 37766

CRYSTAL CREEKMORE
112 Old Standard Hollow Road
Newcomb, TN 37819

J.L. "Sarge" COLLINS
201 Old Woodridge Pike
Jellico, TN 37762

July 17, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

To Whom It May Concern:

Campbell County School System welcomes the opportunity to partner with ETHRA, Roane State, and the TN Colleges of Applied Technology.

Campbell County School System has two high schools, Campbell County High with approximately 1000 CTE students and Jellico High School with approximately 225 CTE students. CTE students from both schools will be encouraged to participate in this dual enrollment opportunity. We anticipate 12 to 15 students in our first offering of this opportunity.

Campbell County Schools is committing to working with RSCC on finding qualified faculty to teach the dual enrollment classes and working with RSCC and TCATs on opportunities for graduates to continue their education at those institutions.

Campbell County High School has the necessary space and is more than willing to locate equipment at the high schools. Campbell County High School would like to incorporate equipment purchase with this grant into existing programs of study at this site.

Campbell County School System has agreed to work with the local partners and employers to facilitate Work-Based Learning Opportunities to high school students over the life of the grant.

The state's support of this grant application and investment of funding into the region will be worthwhile. It will result in a better trained workforce, support the DRIVE to 55 initiatives, provide career pathway opportunities for high school students and others and, ultimately, drive the economy.

Regards,



Robbie Heatherly

Campbell County Schools
CTE Director/Secondary Supervisor

Letter of Agreement

between

Roane State Community College

and

Cumberland County Schools

With this **Letter of Agreement**, the parties agree to collaborate for Cumberland County's portion of the LEAP 2.0 grant named "Advanced Manufacturing and Workforce Center, Phase 3" with ETHRA as the lead entity, and Roane State as the fiscal agent.

The parties affirm their commitment to collaboration in order to provide a streamlined approach to workforce education without undue duplication of efforts. For the purpose of collaboration under the LEAP 2.0 grant, the partners agree as follows:

1. Equipment purchased with LEAP 2.0 funds and allocated to Cumberland County will be shared between Cumberland County High School, Stone Memorial High School, and Roane State-Cumberland County, with Roane State maintaining ownership. The equipment will be moved to the appropriate locations for instruction based on the course offerings at the various schools. Scheduling of the equipment will be mutually agreed upon and coordinated by Roane State.
2. Roane State will deliver courses in the Mechatronics program in both Cumberland County High Schools (MECH 1100, 1200, 1300, 1500). This program is intended for high school students dually enrolled with Roane State. The determination of teacher need will come from the marketing of Mechatronics and the resulting student interest generated in the program. Instructors for these courses will ideally come from Cumberland County School's existing faculty that are appropriately qualified as dual enrollment faculty with Roane State or RSCC personnel that are similarly qualified.
3. RSCC may teach MECH 1400 (Computer Integrated Manufacturing) and MECH 1600 (Programming with LabVIEW) to Cumberland County high school students as dual enrollment classes, utilizing a computer lab at Cumberland County Schools. In addition, RSCC may teach other mechatronics classes that do not duplicate courses or programs of either Cumberland County Schools. Only Cumberland County high schools students would be enrolled in such classes.
4. Cumberland County Schools will develop a schedule to work for Dual Enrollment students from both high schools to access the mechatronics classes.
5. The proposed LEAP grant includes Siemens Level 1 Instructor Training for two instructors from Cumberland County, which may come from either Cumberland County Schools or a RSCC faculty member, with the priority given to Cumberland County CTE teachers or other Cumberland County Schools personnel.

Terms: This agreement will be in effect in case ETHRA/Roane State are awarded the proposed LEAP 2.0 grant and will remain in effect throughout the grant period. Modifications to this agreement during the grant period are permissible by written consent of the parties.

With this Letter, the parties attest their support for collaboration and for the proposed LEAP 2.0 project.


Cumberland County Schools


Roane State Community College

Letter of Agreement

between

Roane State Community College

Loudon County Schools

Lenoir City Schools

With this *Letter of Agreement*, the three parties agree to collaborate for Loudon County's portion of the LEAP 2.0 grant named "Advanced Manufacturing and Workforce Center, Phase 3" with ETHRA as a the lead entity, and Roane State as the fiscal agent.

The parties affirm their commitment to collaboration in order to provide a streamlined approach to workforce education without undue duplication of efforts. For the purpose of collaboration under the LEAP 2.0 grant, the partners agree as follows:

1. Equipment purchased with LEAP 2.0 funds and allocated to Loudon County will be housed at Loudon County Technology Center (LCTC), with Roane State maintaining ownership.
2. Roane State will deliver the courses in the mechatronics program in Loudon County (MECH 1100, 1200, 1300, 1500). This program is intended for high school students dually enrolled with Roane State.
3. In order to permit graduates from TCAT Harriman's Industrial Maintenance program a seamless transition to Roane State's A.A.S. or Certificate program in Mechatronics, RSCC will teach MECH 1900 at LCTC. This course is intended for post-secondary students enrolled as RSCC students. This may be accomplished by the TCAT instructor teaching as an adjunct instructor to RSCC.
4. RSCC may teach MECH 1400 and MECH 1600 as high school dual enrollment classes or to RSCC students, utilizing a computer lab at LCTC. In addition, RSCC may teach other mechatronics classes that do not duplicate TCAT Harriman's programs or those of either Loudon County or Lenoir City Schools.
5. Lenoir City and Loudon County Schools will develop transportation plans for Dual Enrollment students to access the mechatronics classes at LCTC.
6. The proposed LEAP grant includes Siemens Level 1 Instructor Training for two instructors from Loudon County, which may come from a RSCC Faculty member, TCAT instructor or Loudon County or Lenoir City Schools.

Terms: This agreement will be in effect in case ETHRA/Roane State are awarded the proposed LEAP 2.0 grant and will remain in effect throughout the grant period. Modifications to this agreement during the grant period are permissible by written consent of the parties.

With this Letter, the parties attest their support for collaboration and for the proposed LEAP 2.0 project.

Roane State Community College

Title

Date

Loudon County Schools

Title

Date

Jessica K. Barker
Lenoir City Schools
Director of Schools

Title

7/12/16

Date



TENNESSEE COLLEGE OF APPLIED TECHNOLOGY

HARRIMAN

1745 Harriman Highway
Harriman, TN 37748
865-882-6703

July 13, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243-0830

Attention: Curt Johnson

To Whom It May Concern:

The Tennessee College of Applied Technology (TCAT)-Harriman looks forward to partnering with ETHRA, Roane State Community College (RSCC), the Loudon County and Lenoir City School Systems on this LEAP 2.0 project.

TCAT-Harriman created our Loudon County Instructional Service Center to provide technical training in high-wage, high-demand careers for area residents. The center currently offers Welding Technology and Diesel Powered Equipment Technology training to dual enrolled high school students during the day and adults in the evening. It is a very versatile training facility that is responsive to the local industry employment.

The delivery of RSCC's Mechatronics dual enrollment courses to high school students will help to introduce students to and prepare for work in the advanced manufacturing industry. While these students will be prepared to go to work in entry level positions, we are hopeful they will then continue their education upon high school graduation at our TCAT-Harriman's in Industrial Maintenance Technology program or TCAT-Harriman's Residential, Commercial, Industrial Electricity program or at RSCC in the Mechatronics program in nearby Clinton, TN.

The equipment included in this grant will also help support our training including a future Certified Production Technician training at the local high schools. The equipment that will be of benefit to this training includes the AC/DC Electrical (addresses the Electrical component of this module); Pneumatics (supports the pneumatics component); Mechanical Drives (supports the mechanical component) and the Electric Relay Control (supports the machine control & automation component).

We agree to work on the LEAP local county team to optimize scheduling of the equipment, ensure appropriate use of Work-Based Learning opportunities, and facilitate sharing of information for education opportunities and more.

Another benefit of the grant will be to locate the equipment at our facility in Loudon County, as it is available, to support our in-house training and customized employer training.

TCAT-Harriman/Loudon agrees to continue to work with the local partners and employers to facilitate Work-Based Learning Opportunities for TCAT students over the life of the grant. Additionally, we look forward to working with ETHRA to provide On-the-Job training opportunities to selected graduates.

The State of Tennessee's funding of this grant application for the region will be worthwhile. It will result in a better skilled workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students and others and, ultimately, drive the economy.

Regards,



Danice Turpin
Director



TENNESSEE COLLEGE OF APPLIED TECHNOLOGY

JACKSBORO

265 Elkins Road, PO Box 419, Jacksboro, TN 37757 * (423) 566-9629 * (865) 525-3219 * Fax: (423) 566-9713 * tcatjacksboro.edu

July 7, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

To Whom It May Concern:

The Tennessee College of Applied Technology (TCAT) - Jacksboro welcomes the opportunity to partner with ETHRA, Roane State Community College (RSCC), and the Campbell County School System.

The provision of RSCC's Mechatronics dual enrollment courses at the Campbell County Comprehensive and Jellico High School will help to introduce students to and prepare for work in the advanced manufacturing industry. While these students will be prepared to go to work in entry level positions, we are hopeful they will then continue their education upon high school graduation at our TCAT in Jacksboro in Industrial Maintenance/Electricity or at RSCC in the Mechatronics program in nearby Clinton, TN.

TCAT – Jacksboro also looks forward to working on the LEAP local county team to ensure effective scheduling of the equipment, appropriate use of Work-Based Learning opportunities, sharing of information for nearby education opportunities and more.

The equipment included in this grant will also help support our training including a future Certified Production Technician training at the local high schools. The equipment that will be of benefit to this training includes the AC/DC Electrical (addresses the Electrical component of this module); Pneumatics (supports the pneumatics component); Mechanical Drives (supports the mechanical component) and the Electric Relay Control (supports the machine control & automation component). We also look forward to the opportunity to locate the equipment at our facility as it is available to support our in-house training and customized employer training.

Roane State Collaboration Letter

July 7, 2014

Page 2

TCAT - Jacksboro agrees to continue to work with the local partners and employers to facilitate Work-Based Learning Opportunities for TCAT students over the life of the grant. Additionally, we look forward to working with ETHRA to provide On-the-Job training opportunities to selected graduates.

The State of Tennessee's endorsement of this grant application and investment of funding into the region will be worthwhile. It will result in a better trained workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students and others and, ultimately, drive the economy.

Regards,



Debbie Petree
Interim Director



**East Tennessee Human Resource Agency,
Inc.**

Administrative Office
9111 Cross Park Drive, Suite D-100
Knoxville, Tennessee 37923
Voice (865) 691-2551
Fax (865) 531-7216
TDD (866) 868-3830

www.ethra.org

July 14, 2016

Tennessee Higher Education Commission
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

Attention: Curt Johnson

Workforce Development
728-E Emory Valley Road
Oak Ridge, Tennessee 37830
Voice (865) 590-1052
Fax (865) 590-1081

To Whom It May Concern:

ETHRA Workforce Development is gladly serving as the lead organization for a LEAP 2.0 grant partnering with Roane State Community College, the TN Colleges of Applied Technology and local school systems including their career technical education programs. Most importantly, we are pleased to be partnering with and helping the team design their plans based on employer and industry need and demand.

As the provider of the Workforce Investment Opportunity Act (WIOA) funding in LWDA 4, we are pleased to offer the services of the Tennessee Career Centers to help graduates of the program find employment and access other services to improve their marketability and opportunities for employment. Additionally, as detailed in the grant, we have agreed to funding (budget permitting) up to five on-the-job training (OJT) opportunities annually at approximately \$2k each for the three years of the grant. This will be an approximate \$30k investment into helping those served through the LEAP 2.0 grant become and stay successfully employed. We believe these OJTs combined with the Work-Based Learning component in the grant will be a key factor in helping graduates successfully find and retain employment.

Within our mission is to serve adults (often low-income, underemployed, etc.) and dislocated workers (those losing their jobs through a layoff or closure). The opportunities made available by expanding Mechatronics training into Campbell, Cumberland and Loudon will also be important in helping this population gain the skills necessary to obtain and keep employment.

ETHRA endorses and looks forward to helping ensure the state's support of this grant application and investment of funding into the region will be worthwhile. It will result in a better trained workforce, support the DRIVE to 55 initiative, provide career pathway opportunities for high school students, ultimately, drive the economy.

Regards,

Chris Tiller
ETHRA Workforce Development
LWDA 4 Director



Roane State

COMMUNITY COLLEGE

276 Patton Lane Harriman, TN 37748-5011
(865) 354-3000 ext. 4501 Fax (865) 882-4601

Office of the President

July 19, 2016

Tennessee Higher Education Commission
Attention: Curt Johnson
404 James Robertson Parkway, Suite 1900
Nashville, TN 37243 – 0830

To Whom It May Concern:

Roane State Community College is proudly serving as the fiscal agent and lead training organization for this LEAP 2.0 grant. We are honored to be partnering with East TN Human Resource Agency (ETHRA), the TN Colleges of Applied Technology (TCATs) and local school systems and their career technical education programs. Roane State welcomes the opportunity to continue to enhance our partnerships with local school systems and TN Colleges of Applied Technology. Most importantly, this LEAP grant proposal has provided us the opportunity to continue our discussions with local business and industry to meet their training needs for a skilled workforce.

Each member of the team has brought valuable components to this proposal including leadership, student recruitment, placement and other employability services, and on-the-job training opportunities by ETHRA. The TCATS have provided student recruitment, employer engagement, facility, skilled faculty and training opportunities. The local school systems have provided student recruitment, dual enrollment coordination, faculty, facility, transportation for students, and more. Employers have provided their valuable input to help guide the team to design training to meet business and industry needs. Employers have agreed to work closely with the team to make work-based learning and on-the-job training opportunities available to students and graduates.

With help from U.S. Department of Labor, LEAP 1.0 and other funding, Roane State has developed a strong Mechatronics certificate and AAS program. This program has included important components for dual enrollment in Oak Ridge and Clinton. Our next step, with LEAP 2.0 funding, is to expand the Mechatronics program in Campbell, Cumberland and Loudon counties. These are three counties within the Roane State service area not previously served by LEAP funding. Each county has specific needs to meet the skilled workforce demand. We also look forward to expanding our incumbent worker and employer training through our non-credit Workforce Development and Cumberland Business Incubator.

I encourage favorable consideration of this application to support our ongoing effort to achieve the DRIVE to 55 initiative and provide more career pathway opportunities for high school students. Ultimately, funding of this application will help us meet the needs of our local employers and industry for skilled advanced manufacturing technician workers.

Respectfully,

Dr. Chris Whaley
President